

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113

Combination No. : 0 402 746 816

Injection pump  
Pump designation : PES6P120A72ORS7135  
EP type number : 0 412 726 807

Governor  
Governor design. : RQV325...875PA848  
                  : -3K  
Governor no. : 0 421 815 171

Cust. part No. : 313GC5173P18

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : EM6-250L 4VH  
Power KW : 186.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

A01

Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2  
                  : - 4

Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 10.85  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 164.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spreed \_\_\_\_\_

Tolerance  
cm3/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.60  
Tolerance mm : ± 0.10

Del. quantity  
cm3/1000 strokes : 42.00

Tolerance  
cm3/1000 strokes : ± 3.00

Check tolerance  
cm3/1000S. : ± 5.00

Spreed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.00  
Tolerance mm : ± 0.20

Rated speed rpm : 850  
guide sleeve  
travel mm : 6.30  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.80  
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever  
position degree : -1

A02

\_\_\_\_\_ FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm3/1000 strokes : 164.00

Tolerance  
cm3/1000 strokes : ± 1.00

Check tolerance  
cm3/1000S. : ± 4.00

Spreed  
Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000S. : 9.0

\_\_\_\_\_ CONTROL LEVER

control lever  
position degree : 56.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.80  
Rated speed rpm : 930.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1025.0  
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1100

\_\_\_\_\_ LOW IDLE

control lever  
position degree : 13.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 6.10

Testing:

Rated speed rpm : 325  
rack travel mm : 4.60  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00

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TORQUE CONTROL

Rated speed rpm : 875  
rack travel mm : 10.85  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 510  
rack travel mm : 13.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 700  
rack travel mm : 11.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 550  
rack travel mm : 6.55  
Tolerance mm :  $\pm$  6.55

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ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 510  
Pressure hPa : 1200  
rack travel mm : 13.10  
Tolerance mm :  $\pm$  0.10

MEASUREMENT

Rated speed rpm : 510  
rack travel mm : 9.30  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 215  
rack travel mm : 10.35  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 435  
rack travel mm : 12.40  
Tolerance mm :  $\pm$  0.20

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FUEL DELIVERY CHARACTERISTICS

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Aneroid pressure  
hPa : 1200  
Rated speed rpm : 510  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 243.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.00  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

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Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 148.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.00

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STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 9.30  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 185.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  30.00

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LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.60  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.00  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
  
Combination No. : 0 402 746 817  
  
Injection pump  
Pump designation : PES6P120A72ORS7135  
EP type number : 0 412 726 807  
  
Governor  
Governor design. : RQV325...900PA848  
                  : -4K  
Governor no. : 0 421 815 173  
  
Cust. part No. : 313GC5173-P14

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Customer-spec. information  
Customer : MACK TRUCKS INC.  
Motor : EC6 350 4VH  
Power KW : 261.0

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TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 011  
  
Inlet press. bar : 1.50  
  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
  
Test nozzle holder  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 008

A05

Outside diameter : 6.00  
x inside diameter : 2.00  
x length mm : 600

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REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

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BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2  
                  : - 4  
  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery mark  
  
Barrel no. : 1

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BASIC SETTING

Rated speed rpm : 900  
  
Rack travel in mm : 15.25  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 251.00  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 5.00  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.20  
Tolerance mm : ± 0.10

Rated speed rpm : 850  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.60  
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 251.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 60.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 14.20  
Rated speed rpm : 955.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1105.0  
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1200

LOW IDLE

control lever  
position degree : 11.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 5.0

Rated speed rpm : 275

CRT mm min. : 6.50

Testing:

Rated speed rpm : 325  
rack travel mm : 5.00  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00

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TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 15.25  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 625  
rack travel mm : 15.55  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 700  
rack travel mm : 15.50  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 500  
rack travel mm : 7.50  
Tolerance mm :  $\pm 7.50$

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ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 625  
Pressure hPa : 1200  
rack travel mm : 15.55  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Rated speed rpm : 625  
rack travel mm : 8.80  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 280  
rack travel mm : 10.75  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 650  
rack travel mm : 13.80  
Tolerance mm :  $\pm 0.20$

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FUEL DELIVERY CHARACTERISTICS

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Aneroid pressure  
hPa : 1200  
Rated speed rpm : 625  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 281.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$   
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

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Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

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STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 8.80  
Tolerance mm :  $\pm 0.20$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

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LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 5.00  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$   
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

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End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
  
Combination No. : 0 402 746 818  
  
Injection pump  
Pump designation : PES6P120A720RS7135  
EP type number : 0 412 726 807  
  
Governor  
Governor design. : RQV325...875PA848  
                  : -5K  
Governor no. : 0 421 815 174  
  
Cust. part No. : 313GC5173-P22

Customer-spec. information  
Customer : MACK TRUCKS INC.  
Motor : EM 6 275L 4VH  
Power KW : 202.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 011  
  
Inlet press. bar : 1.50  
  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
  
Test nozzle holde  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 008

A09

Outside diameter : 6.00  
x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2  
                  : - 4  
  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery mark  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875  
  
Rack travel in mm : 12.25  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 191.00  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.70

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 2.95  
Tolerance mm : ± 0.15

Rated speed rpm : 850  
guide sleeve  
travel mm : 6.30  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.80  
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875  
Aneroid pressure

hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 191.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 56.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.20  
Rated speed rpm : 930.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1045.0  
Tolerance 1/min : ± 15.0

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1150

LOW IDLE

control lever  
position degree : 13.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.7

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325  
rack travel mm : 4.70  
Tolerance mm :  $\pm$  0.10

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TORQUE CONTROL

Rated speed rpm : 875  
rack travel mm : 12.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 510  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 700  
rack travel mm : 13.30  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 400  
rack travel mm : 6.90  
Tolerance mm :  $\pm$  6.90

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ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 510  
Pressure hPa : 1200  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.10

MEASUREMENT

Rated speed rpm : 510  
rack travel mm : 9.50  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 280  
rack travel mm : 10.65  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 485  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.30

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FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 510  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 265.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

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Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 147.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.00

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STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 9.50  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  30.00

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LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.70  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
Combination No. : 0 402 746 818AA  
Injection pump  
Pump designation : PES6P120A72ORS7135  
EP type number : 0 412 726 807

Governor  
Governor design. :  
Governor no. : 0 421 815 ...

Cust. part No. : 313GC...

Customer-spec. information  
Customer : MACK TRUCKS INC.  
Motor : EM 6 275L 4VH  
Power KW : 202.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00  
x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2  
: - 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 12.25  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 191.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.70  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.10  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 1.95  
Tolerance mm : ± 0.15

Rated speed rpm : 850  
guide sleeve  
travel mm : 6.50  
Tolerance mm : ± 0.20

Rated speed rpm : 1000  
guide sleeve  
travel mm : 9.30  
Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 191.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 61.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.20  
Rated speed rpm : 930.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 970.0  
Tolerance 1/min : ± 15.0

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1150

LOW IDLE

control lever  
position degree : 13.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.7

Rated speed rpm : 275

CRT mm min. : 5.30

Testing:

Rated speed rpm : 325  
rack travel mm : 4.70  
Tolerance mm :  $\pm 0.10$

---

TORQUE CONTROL

Rated speed rpm : 875  
rack travel mm : 12.25  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 510  
rack travel mm : 14.20  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 700  
rack travel mm : 13.30  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 400  
rack travel mm : 6.90  
Tolerance mm :  $\pm 6.90$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 510  
Pressure hPa : 1200  
rack travel mm : 14.20  
Tolerance mm :  $\pm 0.10$

MEASUREMENT

Rated speed rpm : 510  
rack travel mm : 9.50  
Tolerance mm :  $\pm 0.10$

Pressure hPa : 280  
rack travel mm : 10.65  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 485  
rack travel mm : 13.00  
Tolerance mm :  $\pm 0.30$

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 510  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 265.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$   
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 147.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 9.50  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.70  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$   
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
  
Combination No. : 0 402 746 819  
  
Injection pump  
Pump designation : PES6P120A72ORS7135  
EP type number : 0 412 726 807  
  
Governor  
Governor design. : RQV325...875PA848  
                  : -6K  
Governor no. : 0 421 815 175  
  
Cust. part No. : 313GC5173P26

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : EM6-225L 4VH  
Power KW : 165.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 011  
  
Inlet press. bar : 1.50  
  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
  
Test nozzle holder  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 008

A17

Outside diameter : 6.00  
x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Firing order : 1- 5- 3- 6- 2  
                  : - 4  
  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery mark  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875  
  
Rack travel in mm : 11.05  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.00  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.00

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.70  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 41.00

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.00

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : + 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.00  
Tolerance mm : + 0.20

Rated speed rpm : 850  
guide sleeve  
travel mm : 6.30  
Tolerance mm : + 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.80  
Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 56.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.00  
Rated speed rpm : 930.0  
Tolerance 1/min : + 5.0

rack travel mm : 4.00  
Rated speed rpm : 1030.0  
Tolerance 1/min : + 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1150

LOW IDLE

control lever  
position degree : 13.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.7

Rated speed rpm : 275

CRT mm min. : 6.20

Testing:

Rated speed rpm : 325  
rack travel mm : 4.70  
Tolerance mm :  $\pm 0.10$

TORQUE CONTROL

Rated speed rpm : 875  
rack travel mm : 11.05  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 510  
rack travel mm : 13.30  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 700  
rack travel mm : 11.90  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 600  
rack travel mm : 12.60  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 350  
rack travel mm : 6.60  
Tolerance mm :  $\pm 6.60$

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 510  
Pressure hPa : 1200  
rack travel mm : 13.30  
Tolerance mm :  $\pm 0.10$

MEASUREMENT

Rated speed rpm : 510  
rack travel mm : 8.70  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 220  
rack travel mm : 9.75  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 500  
rack travel mm : 12.20  
Tolerance mm :  $\pm 0.20$

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 510  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 237.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$   
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 8.70  
Tolerance mm :  $\pm 0.20$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.70  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 41.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$   
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
Combination No. : 0 402 746 820  
Injection pump  
Pump designation : PES6P120A720RS7135  
EP type number : 0 412 726 807  
Governor  
Governor design. : RQV325...850PA878K  
Governor no. : 0 421 815 177

Cust. part No. : 313GC5173-P4

## Customer-spec. information

Customer : MACK TRUCKS INC.  
Motor : E6 275 4VH  
Power KW : 202.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity  
mins. L/h : 165.0  
Tolerance L/h : ± 5.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00

x length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2  
: - 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.05  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 182.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.60  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 2.95  
Tolerance mm : ± 0.15

Rated speed rpm : 850  
guide sleeve  
travel mm : 6.30  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.80  
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure  
hPa : 900

Del. quantity  
cm<sup>3</sup>/1000 strokes : 182.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 56.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.00  
Rated speed rpm : 905.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1040.0  
Tolerance 1/min : ± 15.0

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1150

LOW IDLE

control lever  
position degree : 11.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325  
rack travel mm : 4.60  
Tolerance mm :  $\pm 0.10$

---

TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 12.05  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 600  
rack travel mm : 12.65  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 700  
rack travel mm : 12.60  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 500  
rack travel mm : 6.20  
Tolerance mm :  $\pm 6.20$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
Pressure hPa : 900  
rack travel mm : 12.65  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Rated speed rpm : 600  
rack travel mm : 9.70  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 215  
rack travel mm : 10.35  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 360  
rack travel mm : 11.70  
Tolerance mm :  $\pm 0.20$

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 900  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 213.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 146.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 9.70  
Tolerance mm :  $\pm 0.20$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 180.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.60  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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End of test specification sheet





BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
  
Combination No. : 0 402 746 821  
  
Injection pump  
Pump designation : PES6P120A72ORS7135  
EP type number : 0 412 726 807  
  
Governor  
Governor design. : RQV325...850PA878  
                  : -1K  
Governor no. : 0 421 815 178  
  
Cust. part No. : 313GC5173-P8

Customer-spec. information  
Customer : MACK TRUCKS INC.  
Motor : E6 300 4VH  
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : + 2.0  
  
Overflow valve : 2 417 413 011  
  
Inlet press. bar : 1.50  
  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : + 5.0  
  
Test nozzle holder  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5  
  
Test lines : 1 680 750 008

A25

Outside diameter : 6.00  
x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : + 1.0  
  
Prestroke mm : 2.80  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
  
Firing order : 1- 5- 3- 6- 2  
                  : - 4  
  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75  
  
Start of delivery mark  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850  
  
Rack travel in mm : 12.95  
Tolerance mm : + 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 201.00  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.00

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.60  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.00

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.00

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : + 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 2.95  
Tolerance mm : + 0.15

Rated speed rpm : 850  
guide sleeve  
travel mm : 6.30  
Tolerance mm : + 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.80  
Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure

hPa : 900

Del. quantity  
cm<sup>3</sup>/1000 strokes : 201.00

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.00

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 56.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.90  
Rated speed rpm : 905.0  
Tolerance 1/min : + 5.0

rack travel mm : 4.00  
Rated speed rpm : 1040.0  
Tolerance 1/min : + 15.0

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1100

LOW IDLE

control lever  
position degree : 11.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325  
rack travel mm : 4.60  
Tolerance mm :  $\pm 0.10$

---

TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 12.95  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 700  
rack travel mm : 13.40  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 600  
rack travel mm : 13.60  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 500  
rack travel mm : 6.55  
Tolerance mm :  $\pm 6.55$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
Pressure hPa : 900  
rack travel mm : 13.60  
Tolerance mm :  $\pm 0.10$

MEASUREMENT

Rated speed rpm : 600  
rack travel mm : 10.10  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 250  
rack travel mm : 10.95  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 475  
rack travel mm : 12.80  
Tolerance mm :  $\pm 0.20$

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 900  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 220.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$

---

Aneroid pressure  
hPa : 900  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 236.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$   
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.00

---

Aneroid pressure  
hPa : )

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 156.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.10  
Tolerance mm :  $\pm 0.20$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 215.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.60  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
  
Combination No. : 0 402 746 822  
  
Injection pump  
Pump designation : PES6P120A720RS7135  
EP type number : 0 412 726 807  
  
Governor  
Governor design. : RQV325...900PA878  
                  : -2K  
Governor no. : 0 421 815 179  
  
Cust. part No. : 3136C5173-P12

Customer spec. information  
Customer : MACK TRUCKS INC.  
Motor : E6 350 4VH  
Power KW : 261.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 011  
  
Inlet press. bar : 1.50  
  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
  
Test nozzle holde  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 008

B01

Outside diameter : 6.00  
x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Firing order : 1- 5- 3- 6- 2  
                  : - 4  
  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery mark  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900  
  
Rack travel in mm : 13.95  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 237.00  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spreed

Tolerance  
cm3/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.10  
Tolerance mm : + 0.10

Del. quantity  
cm3/1000 strokes : 35.00

Tolerance  
cm3/1000 strokes : + 3.00

Check tolerance  
cm3/1000S. : + 5.00

Spreed  
Tolerance  
cm3/1000 strokes : 8.0  
Check tolerance  
cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : + 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.20  
Tolerance mm : + 0.10

Rated speed rpm : 850  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.60  
Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : 900

Del. quantity  
cm3/1000 strokes : 237.00

Tolerance  
cm3/1000 strokes : + 1.00

Check tolerance  
cm3/1000S. : + 4.00

Spreed  
Tolerance  
cm3/1000 strokes : 5.0  
Check tolerance  
cm3/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 59.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.90  
Rated speed rpm : 955.0  
Tolerance 1/min : + 5.0

rack travel mm : 4.00  
Rated speed rpm : 1090.0  
Tolerance 1/min : + 15.0

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1150

LOW IDLE

control lever  
position degree : 11.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.1

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325  
rack travel mm : 4.10  
Tolerance mm :  $\pm 0.10$

---

TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 13.95  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 625  
rack travel mm : 14.15  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 800  
rack travel mm : 14.05  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 500  
rack travel mm : 6.75  
Tolerance mm :  $\pm 6.75$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 625  
Pressure hPa : 900  
rack travel mm : 14.15  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Rated speed rpm : 625  
rack travel mm : 8.50  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 275  
rack travel mm : 10.05  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 570  
rack travel mm : 12.50  
Tolerance mm :  $\pm 0.20$

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 900  
Rated speed rpm : 625

Del. quantity  
cm<sup>3</sup>/1000 strokes : 260.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 138.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 8.50  
Tolerance mm :  $\pm 0.20$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.10  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet





BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113

Combination No. : 0 402 746 823

Injection pump  
Pump designation : PES6P120A720RS7135  
EP type number : 0 412 726 807

Governor  
Governor design. : RQV325...875PA878  
                  : -3K  
Governor no. : 0 421 815 180

Cust. part No. : 3136C5173-P24

Customer-spec. information  
Customer : MACK TRUCKS INC.  
Motor : EM6 275L 4VH  
Power KW : 202.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

B05

Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2  
                  : - 4

Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 12.25  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 191.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.70  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30

Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 2.95

Tolerance mm : ± 0.15

Rated speed rpm : 850  
guide sleeve  
travel mm : 6.30

Tolerance mm : ± 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.80

Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 191.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 56.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.20  
Rated speed rpm : 930.0

Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1045.0

Tolerance 1/min : ± 15.0

rack travel mm : 0.50  
Tolerance mm : ± 0.50

Rated speed rpm : 1150

LOW IDLE

control lever  
position degree : 13.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.7

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325  
rack travel mm : 4.70  
Tolerance mm :  $\pm$  0.10

---

TORQUE CONTROL

Rated speed rpm : 875  
rack travel mm : 12.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 510  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 700  
rack travel mm : 13.30  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 400  
rack travel mm : 6.90  
Tolerance mm :  $\pm$  6.90

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 510  
Pressure hPa : 1200  
rack travel mm : 14.20  
Tolerance mm :  $\pm$  0.10

MEASUREMENT

Rated speed rpm : 510  
rack travel mm : 9.50  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 280  
rack travel mm : 10.65  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 485  
rack travel mm : 13.00  
Tolerance mm :  $\pm$  0.30

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 510  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 265.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.00  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  6.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 147.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.00  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  4.00

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 9.50  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.00  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  30.00

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.70  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 40.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.00  
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm$  5.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
  
Combination No. : 0 402 746 824  
  
Injection pump  
Pump designation : PES6P120A720RS7135  
EP type number : 0 412 726 807  
  
Governor  
Governor design. : RQV325...875PA878  
                  : -4K  
Governor no. : 0 421 815 181  
  
Cust. part No. : 313GC5173-P28

---

Customer-spec. information  
Customer : MACK TRUCKS INC.  
Motor : EM6 225L 4VH  
Power KW : 165.0

---

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 011  
  
Inlet press. bar : 1.50  
  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
  
Test nozzle holder  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 008

B09

Outside diameter : 6.00  
x inside diameter : 2.00  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2  
                  : - 4  
  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery mark  
  
Barrel no. : 1

---

BASIC SETTING

Rated speed rpm : 875  
  
Rack travel in mm : 11.05  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.00  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.70

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 41.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 2.95  
Tolerance mm : ± 0.15

Rated speed rpm : 850  
guide sleeve  
travel mm : 6.30  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.80  
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875  
Aneroid pressure  
hPa : 900

Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 56.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.00  
Rated speed rpm : 930.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1030.0  
Tolerance 1/min : ± 15.0

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1150

LOW IDLE

control lever  
position degree : 13.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.7

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325  
rack travel mm : 4.70  
Tolerance mm :  $\pm$  0.10

---

TORQUE CONTROL

Rated speed rpm : 375  
rack travel mm : 11.05  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 510  
rack travel mm : 13.30  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 600  
rack travel mm : 12.60  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 700  
rack travel mm : 11.90  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 350  
rack travel mm : 6.60  
Tolerance mm :  $\pm$  6.60

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 510  
Pressure hPa : 900  
rack travel mm : 13.30  
Tolerance mm :  $\pm$  0.10

MEASUREMENT

Rated speed rpm : 510  
rack travel mm : 8.70  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 220  
rack travel mm : 9.75  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 500  
rack travel mm : 12.20  
Tolerance mm :  $\pm$  0.20

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure

hPa : 900  
Rated speed rpm : 510  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 237.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.00  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.00

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 8.70  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  30.00

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.70  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 41.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.00  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet





BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113

Combination No. : 0 402 746 825

Injection pump  
Pump designation : PES6P120A720RS7135  
EP type number : 0 412 726 807

Governor  
Governor design. : RQV325...900PA878  
                  : -5K  
Governor no. : 0 421 815 182

Cust. part No. : 313GC5173-P16

Customer-spec. information  
Customer : MACK TRUCKS INC.  
Motor : E C 6 350 4VH  
Power KW : 261.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2  
                  : - 4

Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 15.05  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 251.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread \_\_\_\_\_  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 \_\_\_\_\_  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
 \_\_\_\_\_  
 Rated speed rpm : 325.0  
 Rack travel in mm : 5.00  
 Tolerance mm : ± 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 42.00  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.00  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 5.00  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
 guide sleeve  
 travel mm : 1.30  
 Tolerance mm : ± 0.10  
 Rated speed rpm : 450  
 guide sleeve  
 travel mm : 3.20  
 Tolerance mm : ± 0.10  
 Rated speed rpm : 850  
 guide sleeve  
 travel mm : 6.00  
 Tolerance mm : ± 0.10  
 Rated speed rpm : 1000  
 guide sleeve  
 travel mm : 7.60  
 Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever  
 position degree : -1

Rated speed rpm : 1130  
 Rack travel in mm : 10.00  
 Tolerance mm : ± 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
 Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 251.00  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.00  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.00  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 60.0  
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.0  
 Rated speed rpm : 1130  
 rack travel mm : 14.00  
 Rated speed rpm : 955.0  
 Tolerance 1/min : ± 5.0  
 rack travel mm : 4.00  
 Rated speed rpm : 1095.0  
 Tolerance 1/min : ± 15.0  
 rack travel mm : 4.00  
 rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1200

LOW IDLE

control lever  
 position degree : 11.0  
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 5.0

Rated speed rpm : 275

CRT mm min. : 6.60

Testing:

Rated speed rpm : 325  
rack travel mm : 5.00  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 15.05  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 625  
rack travel mm : 15.45  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 700  
rack travel mm : 15.35  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 500  
rack travel mm : 7.50  
Tolerance mm :  $\pm 7.50$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 625  
Pressure hPa : 1200  
rack travel mm : 15.45  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Rated speed rpm : 625

rack travel mm : 8.50  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 280  
rack travel mm : 10.45  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 650  
rack travel mm : 13.50  
Tolerance mm :  $\pm 0.20$

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200

Rated speed rpm : 625

Del. quantity  
cm<sup>3</sup>/1000 strokes : 275.50

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00

Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400

Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.50

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 8.50  
Tolerance mm :  $\pm 0.20$

Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.00

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 5.00  
Tolerance mm :  $\pm 0.10$

Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
Combination No. : 0 402 746 826  
Injection pump  
Pump designation : PES6P120A72ORS7135  
EP type number : 0 412 726 807

Governor  
Governor design. : RQV325...875PA878  
                  : -6K  
Governor no. : 0 421 815 183

Cust. part No. : 313GC5173-P20

Customer-spec. information  
Customer : MACK TRUCKS INC.  
Motor : EM6 250L 4VH  
Power KW : 186.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

B17

Outside diameter : 6.00  
x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2  
                  : - 4

Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 10.85  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 164.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.60

Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : + 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.00  
Tolerance mm : + 0.20

Rated speed rpm : 850  
guide sleeve  
travel mm : 6.30  
Tolerance mm : + 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.80  
Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 164.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.00  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 56.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.80  
Rated speed rpm : 930.0  
Tolerance 1/min : + 5.0

rack travel mm : 4.00  
Rated speed rpm : 1025.0  
Tolerance 1/min : + 15.0

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1100

LOW IDLE

control lever  
position degree : 13.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325  
rack travel mm : 4.60  
Tolerance mm :  $\pm 0.10$

---

TORQUE CONTROL

Rated speed rpm : 875  
rack travel mm : 10.85  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 510  
rack travel mm : 13.10  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 700  
rack travel mm : 11.70  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 550  
rack travel mm : 6.55  
Tolerance mm :  $\pm 6.55$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 510  
Pressure hPa : 1200  
rack travel mm : 13.10  
Tolerance mm :  $\pm 0.10$

MEASUREMENT

Rated speed rpm : 510  
rack travel mm : 8.80  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 215  
rack travel mm : 10.35  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 435  
rack travel mm : 12.40  
Tolerance mm :  $\pm 0.20$

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 510  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 243.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 148.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 8.80  
Tolerance mm :  $\pm 0.20$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.60  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

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End of test specification sheet





BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
Combination No. : 0 402 746 828  
Injection pump  
Pump designation : PES6P120A72ORS7148  
EP type number : 0 412 726 810  
Governor  
Governor design. : RQV325...875PA878  
                  : -7K  
Governor no. : 0 421 815 184  
Cust. part No. : 313GC5174-P4

Customer-spec. information  
Customer : MACK TRUCKS INC.  
Motor : EM6 300L 4VH  
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 011  
Inlet press. bar : 1.50  
Overflow quantity  
min. L/h : 165.0  
Tolerance L/h : ± 5.0  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008

Outside diameter : 6.00  
x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 7.00  
Tolerance mm : ± 1.00  
Firing order : 1- 5- 3- 6- 2  
                  : - 4  
Phasing : 0-60-120-180-240  
                  : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Start of delivery mark  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875  
Rack travel in mm : 11.15  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

---

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.00

---

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325.0

Rack travel in mm : 4.60  
Tolerance mm : +- 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.00  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : +- 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 2.65  
Tolerance mm : +- 0.15

Rated speed rpm : 600  
guide sleeve  
travel mm : 4.20  
Tolerance mm : +- 0.10

Rated speed rpm : 875  
guide sleeve  
travel mm : 7.40  
Tolerance mm : +- 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 8.85

Tolerance mm : +- 0.15

---

#### GUIDE SLEEVE POSITION

control lever  
position degree : -1

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.00  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

#### CONTROL LEVER

control lever  
position degree : 59.0  
tolerance degree : +- 4.0

---

#### RATED SPEED

rack travel mm : 10.10  
Rated speed rpm : 920.0  
Tolerance 1/min : +- 5.0

rack travel mm : 4.00  
Rated speed rpm : 1015.0  
Tolerance 1/min : +- 15.0

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 1150

---

#### LOW IDLE

control lever  
position degree : 11.0  
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325  
rack travel mm : 4.60  
Tolerance mm :  $\pm 0.10$

TORQUE CONTROL

Rated speed rpm : 875  
rack travel mm : 11.15  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 510  
rack travel mm : 16.60  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 700  
rack travel mm : 13.40  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 600  
rack travel mm : 15.60  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 450  
rack travel mm : 8.30  
Tolerance mm :  $\pm 8.30$

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 510  
Pressure hPa : 1500  
rack travel mm : 16.60  
Tolerance mm :  $\pm 0.10$

MEASUREMENT

Rated speed rpm : 510  
rack travel mm : 8.50  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 370  
rack travel mm : 10.75  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 710

rack travel mm : 14.60  
Tolerance mm :  $\pm 0.20$

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 510  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 302.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 154.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 8.50  
Tolerance mm :  $\pm 0.20$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 10.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 15.00$

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.60  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113

Combination No. : 0 402 746 829

Injection pump  
Pump designation : PES6P120A720RS7135  
EP type number : 0 412 726 807

Governor  
Governor design. : RQV325...1050PA848  
                  : -8K  
Governor no. : 0 421 815 185

Cust. part No. : 313GC5173P30

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : E6-270 4VH  
Power KW : 201.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : + 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : + 5.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : + 1.0

Prestroke mm : 2.80  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10

Firing order : 1- 5- 3- 6- 2  
                  : - 4

Phasing : 0-60-120-180-240  
          : -300  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.25  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.00

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.00

Check tolerance  
cm<sup>3</sup>/1000s. : + 4.00

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  
 Rated speed rpm : 325.0  
 Rack travel in mm : 5.00  
 Tolerance mm : ± 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 41.00  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.00  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 5.00  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
 guide sleeve  
 travel mm : 1.50  
 Tolerance mm : ± 0.10  
 Rated speed rpm : 450  
 guide sleeve  
 travel mm : 2.65  
 Tolerance mm : ± 0.15  
 Rated speed rpm : 800  
 guide sleeve  
 travel mm : 4.90  
 Tolerance mm : ± 0.10  
 Rated speed rpm : 1050  
 guide sleeve  
 travel mm : 7.45  
 Tolerance mm : ± 0.15  
 Rated speed rpm : 1200  
 guide sleeve  
 travel mm : 9.50  
 Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever  
 position degree : -1  
 Rated speed rpm : 1210  
 Rack travel in mm : 10.00  
 Tolerance mm : ± 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
 Aneroid pressure  
 hPa : 900  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 175.00  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.00  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.00  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 59.0  
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.0  
 Rated speed rpm : 1210  
 rack travel mm : 11.20  
 Rated speed rpm : 1095.0  
 Tolerance 1/min : ± 5.0  
 rack travel mm : 4.00  
 Rated speed rpm : 1185.0  
 Tolerance 1/min : ± 15.0  
 rack travel mm : 4.00  
 rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1300

LOW IDLE

control lever  
position degree : 14.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 5.0

Rated speed rpm : 275

CRT mm min. : 6.40

Testing:

Rated speed rpm : 325  
rack travel mm : 5.00  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00

---

#### TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 12.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 630  
rack travel mm : 12.10  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 925  
rack travel mm : 12.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 800  
rack travel mm : 12.30  
Tolerance mm :  $\pm$  0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 630  
Pressure hPa : 900  
rack travel mm : 12.05  
Tolerance mm :  $\pm$  0.05

#### MEASUREMENT

Rated speed rpm : 630  
rack travel mm : 8.80  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 270  
rack travel mm : 9.65  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 400  
rack travel mm : 11.25  
Tolerance mm :  $\pm$  0.25

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 900  
Rated speed rpm : 630  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 195.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 131.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.00

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 8.80  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  30.00

---

#### LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 5.00  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 41.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113

Combination No. : 0 402 746 836

Injection pump  
Pump designation : PES6P120A720RS7157  
EP type number : 0 412 726 814

Governor  
Governor design. : RQV325...900PA848  
: -12K  
Governor no. : 0 421 815 192

Cust. part No. : 313GC5179-P18

Customer-spec. information  
Customer : MACK TRUCKS INC.  
Motor : E7 400 4VH  
Power KW : 298.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2  
: - 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 15.55  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 273.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 5.00  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 46.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.45  
Tolerance mm : ± 0.15

Rated speed rpm : 500  
guide sleeve  
travel mm : 3.70  
Tolerance mm : ± 0.30

Rated speed rpm : 900  
guide sleeve  
travel mm : 6.80  
Tolerance mm : ± 0.10

Rated speed rpm : 1075  
guide sleeve  
travel mm : 8.65  
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 273.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 60.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 14.50  
Rated speed rpm : 945.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1130.0  
Tolerance 1/min : ± 15.0

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1250

LOW IDLE

control lever  
position degree : 14.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 5.0

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325  
rack travel mm : 5.00  
Tolerance mm : ± 0.10

---

TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 15.55  
Tolerance mm : ± 0.05

Rated speed rpm : 625  
rack travel mm : 15.40  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 7.30  
Tolerance mm : ± 7.30

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 900  
Pressure hPa : 1200  
rack travel mm : 15.55  
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 900  
rack travel mm : 8.40  
Tolerance mm : ± 0.20

Pressure hPa : 225  
rack travel mm : 9.45  
Tolerance mm : ± 0.05

Pressure hPa : 770  
rack travel mm : 14.00  
Tolerance mm : ± 0.20

---

Start interlock

Rated speed rpm : 280

Check  
speed 1/min : 290

---

FUEL DELIVERY CHARACTERISTICS

C03

---

Aneroid pressure

hPa : 1200  
Rated speed rpm : 625  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 312.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 168.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.10  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 30.00

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 5.00  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 46.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113

Combination No. : 0 402 746 837

Injection pump  
Pump designation : PES6P120A720RS7157  
EP type number : 0 412 726 814

Governor  
Governor design. : RQV325...900PA848  
: -15K  
Governor no. : 0 421 815 193

Cust. part No. : 313GC5179-P2

Customer-spec. information

Customer : MACK TRUCKS INC.  
Motor : E7 350 4VH  
Power KW : 261.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2  
: - 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.05  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 229.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spreed \_\_\_\_\_

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 5.40  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 44.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.45  
Tolerance mm : ± 0.15

Rated speed rpm : 500  
guide sleeve  
travel mm : 3.70  
Tolerance mm : ± 0.30

Rated speed rpm : 900  
guide sleeve  
travel mm : 6.80  
Tolerance mm : ± 0.10

Rated speed rpm : 1075  
guide sleeve  
travel mm : 8.65  
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : 900

Del. quantity  
cm<sup>3</sup>/1000 strokes : 229.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 60.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.00  
Rated speed rpm : 955.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1115.0  
Tolerance 1/min : ± 15.0

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1250

LOW IDLE

control lever  
position degree : 14.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 5.4

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325  
rack travel mm : 5.40  
Tolerance mm : ± 0.10

---

TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 14.05  
Tolerance mm : ± 0.05

Rated speed rpm : 625  
rack travel mm : 13.90  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 6.60  
Tolerance mm : ± 6.60

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 900  
Pressure hPa : 900  
rack travel mm : 14.05  
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 900  
  
rack travel mm : 9.00  
Tolerance mm : ± 0.20

Pressure hPa : 225  
rack travel mm : 10.25  
Tolerance mm : ± 0.05

Pressure hPa : 545  
rack travel mm : 12.90  
Tolerance mm : ± 0.20

---

Start interlock

Rated speed rpm : 265

Check  
speed 1/min : 275

---

FUEL DELIVERY CHARACTERISTICS

C07

---

Aneroid pressure

hPa : 900

Rated speed rpm : 625

Del. quantity  
cm<sup>3</sup>/1000 strokes : 263.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.00

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00

Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400

Del. quantity  
cm<sup>3</sup>/1000 strokes : 168.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.60

Tolerance mm : ± 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 30.00

---

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 5.40  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 44.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet





BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
 Test oil : ISO-4113  
 Combination No. : 0 402 746 838  
 Injection pump  
 Pump designation : PES6P120A72ORS7157  
 EP type number : 0 412 726 814  
 Governor  
 Governor design. : RQV325...875PA848  
 : -14K  
 Governor no. : 0 421 815 194  
 Cust. part No. : 313GC5179-P26

Customer-spec. information  
 Customer : MACK  
 Motor : EM7-250L 4VH  
 Power KW : 187.0

TEST BENCH REQUIREMENTS

Test oil inlet  
 temp. °C : 40.0  
 Tolerance °C : ± 2.0  
 Overflow valve : 2 417 413 011  
 Overflow quantity  
 min. l/h : 165.0  
 Tolerance l/h : ± 5.0  
 Test nozzle holder  
 assembly : 1 688 901 101  
 Opening pressure  
 bar : 208.5  
 Tolerance bar : ± 1.5  
 Test lines : 1 680 750 008  
 Outside diameter : 6.00

x inside diameter : 2.00  
 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
 Set equal delivery quant.  
 per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
 Tolerance bar : ± 1.0  
 Prestroke mm : 2.80  
 Tolerance mm : ± 0.05  
 Check  
 tolerance mm : ± 0.10  
 Firing order : 1- 5- 3- 6- 2  
 : - 4  
 Phasing : 0-60-120-180-240  
 : -300  
 Tolerance : ± 0.50  
 Check  
 tolerance °NW : ± 0.75  
 Start of delivery mark  
 Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875  
 Rack travel in mm : 10.45  
 Tolerance mm : ± 0.05  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 175.00  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.00  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.00  
 Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.00

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.45  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 500  
guide sleeve  
travel mm : 3.70  
Tolerance mm :  $\pm$  0.30

Rated speed rpm : 900  
guide sleeve  
travel mm : 6.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 1075  
guide sleeve  
travel mm : 8.65  
Tolerance mm :  $\pm$  0.25

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875  
Aneroid pressure  
hPa : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.00  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 58.0  
tolerance degree :  $\pm$  4.0

RATED SPEED

rack travel mm : 9.40  
Rated speed rpm : 920.0  
Tolerance 1/min :  $\pm$  5.0

rack travel mm : 4.00  
Rated speed rpm : 1035.0  
Tolerance 1/min :  $\pm$  15.0

rack travel mm : 0.50  
Tolerance mm :  $\pm$  0.50  
Rated speed rpm : 1200

LOW IDLE

control lever  
position degree : 16.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 6.30

Testing:

Rated speed rpm : 325  
rack travel mm : 4.80  
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 875  
rack travel mm : 10.45  
Tolerance mm : ± 0.05

Rated speed rpm : 510  
rack travel mm : 12.00  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
rack travel mm : 5.90  
Tolerance mm : ± 5.90

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 510  
Pressure hPa : 900  
rack travel mm : 12.00  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 510  
rack travel mm : 8.00  
Tolerance mm : ± 0.20

Pressure hPa : 235  
rack travel mm : 8.85  
Tolerance mm : ± 0.05

Pressure hPa : 485  
rack travel mm : 11.00  
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 275

Check speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 900  
Rated speed rpm : 510  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 247.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.00  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 153.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.20  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.80  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
  
Combination No. : 0 402 746 839  
  
Injection pump  
Pump designation : PES6P120A72ORS7148  
EP type number : 0 412 726 810  
  
Governor  
Governor design. : RQV325...875PA848  
                  : -19K  
Governor no. : 0 421 815 199  
  
Cust. part No. : 313GC5179-P6

Customer-spec. information  
Customer : MACK  
Motor : EM7 300L 4VH  
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 011  
  
Inlet press. bar : 1.50  
  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
  
Test nozzle holder  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 008

Outside diameter : 6.00  
x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 7.00  
Tolerance mm : ± 1.00  
  
Firing order : 1- 5- 3- 6- 2  
                  : - 4  
  
Phasing : 0-60-120-180-240  
                  : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery mark  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875  
  
Rack travel in mm : 11.55  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 211.00  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

---

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325.0

Rack travel in mm : 4.60  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 44.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 2.65  
Tolerance mm : ± 0.15

Rated speed rpm : 600  
guide sleeve  
travel mm : 4.20  
Tolerance mm : ± 0.10

Rated speed rpm : 875  
guide sleeve  
travel mm : 7.40  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 8.85

Tolerance mm : ± 0.15

---

#### GUIDE SLEEVE POSITION

control lever  
position degree : -1

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875

Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 211.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

#### CONTROL LEVER

control lever  
position degree : 61.0  
tolerance degree : ± 4.0

#### RATED SPEED

rack travel mm : 10.50  
Rated speed rpm : 920.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1015.0  
Tolerance 1/min : ± 15.0

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1150

---

#### LOW IDLE

control lever  
position degree : 12.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325  
rack travel mm : 4.60  
Tolerance mm :  $\pm 0.10$

---

TORQUE CONTROL

Rated speed rpm : 875  
rack travel mm : 11.55  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 510  
rack travel mm : 16.10  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 800  
rack travel mm : 12.10  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 600  
rack travel mm : 15.20  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 450  
rack travel mm : 7.85  
Tolerance mm :  $\pm 7.85$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 510  
Pressure hPa : 1200  
rack travel mm : 16.10  
Tolerance mm :  $\pm 0.10$

MEASUREMENT

Rated speed rpm : 510  
rack travel mm : 8.90  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 325  
rack travel mm : 10.65  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 815

rack travel mm : 14.50  
Tolerance mm :  $\pm 0.20$

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 510  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 297.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 168.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 8.90  
Tolerance mm :  $\pm 0.20$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 10.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 20.00$

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.60  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 44.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$

Check tolerance  
cm<sup>3</sup>/1000s. : ± 5.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113

Combination No. : 0 402 746 840

Injection pump  
Pump designation : PES6P120A720RS7135  
EP type number : 0 412 726 807

Governor  
Governor design. : RQV325...875PA848  
                  : -18K  
Governor no. : 0 421 815 198

Cust. part No. : 313GC5173-P32

Customer-spec. information  
Customer : MACK  
Motor : EMC6 250L 4VH  
Power KW : 187.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

C17

Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2  
                  : - 4

Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 11.25  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 174.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.60  
Tolerance mm : +- 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : +- 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.00  
Tolerance mm : +- 0.20

Rated speed rpm : 850  
guide sleeve  
travel mm : 6.30  
Tolerance mm : +- 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.80  
Tolerance mm : +- 0.10

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875  
Aneroid pressure

hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 174.00

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 58.0  
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 10.20  
Rated speed rpm : 920.0  
Tolerance 1/min : +- 5.0

rack travel mm : 4.00  
Rated speed rpm : 1025.0  
Tolerance 1/min : +- 15.0

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 1100

LOW IDLE

control lever  
position degree : 13.0  
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325  
rack travel mm : 4.60  
Tolerance mm : ± 0.10

---

TORQUE CONTROL

Rated speed rpm : 875  
rack travel mm : 11.25  
Tolerance mm : ± 0.05

Rated speed rpm : 510  
rack travel mm : 13.20  
Tolerance mm : ± 0.10

Rated speed rpm : 700  
rack travel mm : 12.10  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
rack travel mm : 6.55  
Tolerance mm : ± 6.55

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 510  
Pressure hPa : 1200  
rack travel mm : 13.20  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 510  
rack travel mm : 9.30  
Tolerance mm : ± 0.20

Pressure hPa : 215  
rack travel mm : 10.35  
Tolerance mm : ± 0.05

Pressure hPa : 435  
rack travel mm : 12.40  
Tolerance mm : ± 0.20

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200  
Rated speed rpm : 510  
Del. quantity cm<sup>3</sup>/1000 strokes : 242.00  
Tolerance cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance cm<sup>3</sup>/1000s. : ± 6.00  
Speed Tolerance cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance cm<sup>3</sup>/1000s. : 12.

---

Rated speed rpm : 400  
Del. quantity cm<sup>3</sup>/1000 strokes : 148.00  
Tolerance cm<sup>3</sup>/1000 strokes : ± 2.00  
Check tolerance cm<sup>3</sup>/1000s. : ± 4.00

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 9.30  
Tolerance mm : ± 0.20  
Del. quantity cm<sup>3</sup>/1000 strokes : 180.00  
Tolerance cm<sup>3</sup>/1000 strokes : ± 20.00  
Check tolerance cm<sup>3</sup>/1000s. : ± 30.00

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.60  
Tolerance mm : ± 0.10  
Del. quantity cm<sup>3</sup>/1000 strokes : 42.00  
Tolerance cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance cm<sup>3</sup>/1000s. : ± 5.00  
Speed Tolerance cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
Combination No. : 0 402 746 842  
Injection pump  
Pump designation : PES6P120A72ORS7164  
EP type number : 0 412 726 816  
Governor  
Governor design. : RQV325...875PA848  
: -17K  
Governor no. : 0 421 815 200  
Cust. part No. : 3136C5181P14

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : EMC6 300L 4VH  
Power KW : 200.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 011  
Overflow quantity  
min. L/h : 165.0  
Tolerance L/h : ± 5.0  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 12.50  
Tolerance mm : ± 0.50  
Firing order : 1- 5- 3- 6- 2  
: - 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Start of delivery mark  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875  
Rack travel in mm : 14.95  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : + 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.20  
Tolerance mm : + 0.20

Rated speed rpm : 850  
guide sleeve  
travel mm : 6.00  
Tolerance mm : + 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.55  
Tolerance mm : + 0.15

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.00  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 58.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.90  
Rated speed rpm : 920.0  
Tolerance 1/min : + 5.0

rack travel mm : 4.00  
Rated speed rpm : 1080.0  
Tolerance 1/min : + 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1160

LOW IDLE

control lever  
position degree : 14.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.8

Rated speed rpm : 275  
CRT mm min. : 5.90

Testing:

Rated speed rpm : 325  
rack travel mm : 4.80  
Tolerance mm :  $\pm 0.10$   
  
rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 875  
rack travel mm : 14.95  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 510  
rack travel mm : 17.00  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 700  
rack travel mm : 15.80  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 600  
rack travel mm : 16.70  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 420  
rack travel mm : 8.40  
Tolerance mm :  $\pm 8.40$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 510  
Pressure hPa : 1200  
rack travel mm : 17.00  
Tolerance mm :  $\pm 0.10$

MEASUREMENT

Rated speed rpm : 510  
  
rack travel mm : 11.10  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 375  
rack travel mm : 12.75  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 735  
rack travel mm : 15.90

Tolerance mm :  $\pm 0.20$

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 510  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 310.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.10  
Tolerance mm :  $\pm 0.20$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 180.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0  
  
Rack travel in mm : 4.80  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113

Combination No. : 0 402 746 846

Injection pump  
Pump designation : PES6P120A72ORS7135  
EP type number : 0 412 726 807

Governor  
Governor design. : RQV325...850PA848  
                  : -23K  
Governor no. : 0 421 815 204

Cust. part No. : 313GC5184-P6

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : E6 300 4VH  
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

C25

Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2  
                  : - 4

Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.95  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 201.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread  


---

 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  


---

 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  


---

  
 Rated speed rpm : 325.0  
  
 Rack travel in mm : 4.60  
 Tolerance mm : ± 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 35.00  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.00  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 5.00  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
 guide sleeve  
 travel mm : 1.30  
 Tolerance mm : ± 0.10  
  
 Rated speed rpm : 450  
 guide sleeve  
 travel mm : 2.95  
 Tolerance mm : ± 0.15  
  
 Rated speed rpm : 850  
 guide sleeve  
 travel mm : 6.30  
 Tolerance mm : ± 0.10  
  
 Rated speed rpm : 1000  
 guide sleeve  
 travel mm : 7.80  
 Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever  
 position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
 Aneroid pressure  
 hPa : 900  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 201.00  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.00  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.00  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 54.0  
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.90  
 Rated speed rpm : 905.0  
 Tolerance 1/min : ± 5.0  
  
 rack travel mm : 4.00  
 Rated speed rpm : 1040.0  
 Tolerance 1/min : ± 15.0  
  
 rack travel mm : 4.00  
  
 rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1100

LOW IDLE

control lever  
 position degree : 11.0  
 tolerance degree : ± 4.0  
  
 Setting point w/out bumper spring  
  
 Rated speed rpm : 325  
 rack travel mm : 4.6  
  
 Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325  
rack travel mm : 4.60  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 12.95  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 700  
rack travel mm : 13.65  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 600  
rack travel mm : 13.85  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 500  
rack travel mm : 6.80  
Tolerance mm :  $\pm 6.80$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
Pressure hPa : 900  
rack travel mm : 13.85  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Rated speed rpm : 600  
rack travel mm : 10.40  
Tolerance mm :  $\pm 0.10$

Pressure hPa : 250  
rack travel mm : 11.25  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 475  
rack travel mm : 13.10  
Tolerance mm :  $\pm 0.20$

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 900  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$   
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 156.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.40  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 215.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.60  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$   
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113

Combination No. : 0 402 746 847

Injection pump  
Pump designation : PES6P120A720RS7135  
EP type number : 0 412 726 807

Governor  
Governor design. : RQV325...850PA878  
                  : -8K  
Governor no. : 0 421 815 205

Cust. part No. : 313GC5184-P8

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : E6 300 4VH  
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0

Test nozzle holde  
assembly : 1 688 991 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

D01

Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2  
                  : - 4

Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.95  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 201.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325.0

Rack travel in mm : 4.60  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 2.95  
Tolerance mm : ± 0.15

Rated speed rpm : 850  
guide sleeve  
travel mm : 6.30  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.80  
Tolerance mm : ± 0.10

---

GUIDE SLEEVE POSITION

control lever  
position degree : -1

D02

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure  
hPa : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 201.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 54.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.90  
Rated speed rpm : 905.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1040.0  
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1100

---

LOW IDLE

control lever  
position degree : 11.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50  
Testing:  
Rated speed rpm : 325  
rack travel mm : 4.60  
Tolerance mm : ± 0.10  
  
rack travel mm : 2.00

---

TORQUE CONTROL  
Rated speed rpm : 850  
rack travel mm : 12.95  
Tolerance mm : ± 0.05

Rated speed rpm : 700  
rack travel mm : 13.65  
Tolerance mm : ± 0.05

Rated speed rpm : 600  
rack travel mm : 13.85  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
rack travel mm : 6.80  
Tolerance mm : ± 6.80

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
Pressure hPa : 900  
rack travel mm : 13.85  
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 600  
  
rack travel mm : 10.40  
Tolerance mm : ± 0.10

Pressure hPa : 250  
rack travel mm : 11.25  
Tolerance mm : ± 0.05

Pressure hPa : 475  
rack travel mm : 13.10  
Tolerance mm : ± 0.20

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 900  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 156.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.40  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 215.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 30.00

---

LOW IDLE

Rated speed rpm : 325.0  
  
Rack travel in mm : 4.60  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet





BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
  
Combination No. : 0 402 746 848  
  
Injection pump  
Pump designation : PES6P120A72ORS7135  
EP type number : 0 412 726 807  
  
Governor  
Governor design. : RQV325...900PA878  
: -9K  
Governor no. : 0 421 815 206  
  
Cust. part No. : 313GC5184-P12

Customer-spec. information  
Customer : MACK TRUCKS INC.  
Motor : E6-350  
Power KW : 261.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 011  
  
Inlet press. bar : 1.50  
  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
  
Test nozzle holder  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 008

D05

Outside diameter : 6.00  
x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Firing order : 1- 5- 3- 6- 2  
: - 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery mark  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900  
  
Rack travel in mm : 14.85  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 249.00  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance

cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 5.00

Tolerance mm : ± 0.10

Del. quantity

cm<sup>3</sup>/1000 strokes : 42.00

Tolerance

cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance

cm<sup>3</sup>/1000S. : ± 5.00

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance

cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve

travel mm : 1.30

Tolerance mm : ± 0.10

Rated speed rpm : 450

guide sleeve

travel mm : 3.20

Tolerance mm : ± 0.10

Rated speed rpm : 850

guide sleeve

travel mm : 6.00

Tolerance mm : ± 0.10

Rated speed rpm : 1000

guide sleeve

travel mm : 7.60

Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever

position degree : -1

D06

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure

hPa : 1200

Del. quantity

cm<sup>3</sup>/1000 strokes : 249.00

Tolerance

cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance

cm<sup>3</sup>/1000S. : ± 4.00

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance

cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 60.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.80

Rated speed rpm : 955.0

Tolerance 1/min : ± 5.0

rack travel mm : 4.00

Rated speed rpm : 1090.0

Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1200

LOW IDLE

control lever

position degree : 11.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 5.0

Rated speed rpm : 275

CRT mm min. : 6.60

Testing:

Rated speed rpm : 325  
rack travel mm : 5.00  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 14.85  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 625  
rack travel mm : 15.25  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 700  
rack travel mm : 15.05  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 500  
rack travel mm : 7.45  
Tolerance mm :  $\pm 7.45$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 625  
Pressure hPa : 1200  
rack travel mm : 15.25  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Rated speed rpm : 625  
rack travel mm : 8.50  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 310  
rack travel mm : 10.25  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 710  
rack travel mm : 13.90  
Tolerance mm :  $\pm 0.20$

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 625  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 274.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 6.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 8.50  
Tolerance mm :  $\pm 0.20$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 5.00  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 5.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
  
Combination No. : 0 402 746 849  
  
Injection pump  
Pump designation : PES6P120A720RS7135  
EP type number : 0 412 726 807  
  
Governor  
Governor design. : RGV325...850PA878  
                  : -10K  
Governor no. : 0 421 815 209  
  
Cust. part No. : 313GC5184-P4

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : E6 275 4VH  
Power KW : 202.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 011  
  
Inlet press. bar : 1.50  
  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
  
Test nozzle holder  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 008

D09

Outside diameter : 6.00  
x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Firing order : 1- 5- 3- 6- 2  
                  : - 4  
  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery mark  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850  
  
Rack travel in mm : 11.95  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 184.00  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.60  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30

Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 2.95

Tolerance mm : ± 0.15

Rated speed rpm : 850  
guide sleeve  
travel mm : 6.30

Tolerance mm : ± 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.80

Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850

Aneroid pressure  
hPa : 900

Del. quantity  
cm<sup>3</sup>/1000 strokes : 184.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 54.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.90  
Rated speed rpm : 905.0

Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1040.0

Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50

Rated speed rpm : 1100

LOW IDLE

control lever  
position degree : 11.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50  
Testing:  
Rated speed rpm : 325  
rack travel mm : 4.60  
Tolerance mm :  $\pm 0.10$   
rack travel mm : 2.00

---

TORQUE CONTROL  
Rated speed rpm : 850  
rack travel mm : 11.95  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 700  
rack travel mm : 12.85  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 600  
rack travel mm : 13.05  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 500  
rack travel mm : 6.40  
Tolerance mm :  $\pm 6.40$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
Pressure hPa : 900  
rack travel mm : 13.05  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Rated speed rpm : 600  
rack travel mm : 10.40  
Tolerance mm :  $\pm 0.10$

Pressure hPa : 225  
rack travel mm : 11.05  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 385  
rack travel mm : 12.40  
Tolerance mm :  $\pm 0.20$

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 900  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 222.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 6.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 156.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.40  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 215.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.60  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 5.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet





BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
  
Combination No. : 0 402 746 850  
  
Injection pump  
Pump designation : PES6P120A72ORS7135  
EP type number : 0 412 726 807  
  
Governor  
Governor design. : RQV325...900PA848  
                  : -24K  
Governor no. : 0 421 815 207  
  
Cust. part No. : 313GC5184-P10

Customer-spec. information  
Customer : MACK TRUCKS INC.  
Motor : E6-350  
Power KW : 261.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00  
x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2  
                  : - 4

Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.85  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 249.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance

cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 5.00

Tolerance mm : ± 0.10

Del. quantity

cm<sup>3</sup>/1000 strokes : 42.00

Tolerance

cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance

cm<sup>3</sup>/1000S. : ± 5.00

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance

cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve

travel mm : 1.30

Tolerance mm : ± 0.10

Rated speed rpm : 450

guide sleeve

travel mm : 3.20

Tolerance mm : ± 0.10

Rated speed rpm : 850

guide sleeve

travel mm : 6.00

Tolerance mm : ± 0.10

Rated speed rpm : 1000

guide sleeve

travel mm : 7.60

Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever

position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure

hPa : 1200

Del. quantity

cm<sup>3</sup>/1000 strokes : 249.00

Tolerance

cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance

cm<sup>3</sup>/1000S. : ± 4.00

Spread

Tolerance

cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance

cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 60.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.80

Rated speed rpm : 955.0

Tolerance 1/min : ± 5.0

rack travel mm : 4.00

Rated speed rpm : 1090.0

Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1200

LOW IDLE

control lever

position degree : 11.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 5.0

Rated speed rpm : 275

CRT mm min. : 6.60

Testing:

Rated speed rpm : 325  
rack travel mm : 5.00  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 14.85  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 625  
rack travel mm : 15.25  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 700  
rack travel mm : 15.05  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 500  
rack travel mm : 7.45  
Tolerance mm :  $\pm 7.45$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 625  
Pressure hPa : 1200  
rack travel mm : 15.25  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Rated speed rpm : 625  
rack travel mm : 8.50  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 310  
rack travel mm : 10.25  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 710  
rack travel mm : 13.90  
Tolerance mm :  $\pm 0.20$

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 625  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 274.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$   
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 8.50  
Tolerance mm :  $\pm 0.20$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 5.00  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$   
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113

Combination No. : 0 402 746 851

Injection pump  
Pump designation : PES6P120A720RS7135  
EP type number : 0 412 726 807

Governor  
Governor design. : RQV325...850PA848  
: -25K  
Governor no. : 0 421 815 208

Cust. part No. : 313GC5184-P2

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : E6 275 4VH  
Power KW : 202.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00

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x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2  
: - 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.95  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 184.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.00

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0  
Rack travel in mm : 4.50  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 2.95  
Tolerance mm : ± 0.15

Rated speed rpm : 850  
guide sleeve  
travel mm : 6.30  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.80  
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure  
hPa : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 184.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 54.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.90  
Rated speed rpm : 905.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1035.0  
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1100

LOW IDLE

control lever  
position degree : 11.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.5

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325  
rack travel mm : 4.50  
Tolerance mm : ± 0.10

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 11.95  
Tolerance mm : ± 0.05

Rated speed rpm : 700  
rack travel mm : 12.60  
Tolerance mm : ± 0.10

Rated speed rpm : 600  
rack travel mm : 13.00  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 6.40  
Tolerance mm : ± 6.40

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
Pressure hPa : 900  
rack travel mm : 13.05  
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 600  
rack travel mm : 10.10  
Tolerance mm : ± 0.20

Pressure hPa : 225  
rack travel mm : 11.05  
Tolerance mm : ± 0.05

Pressure hPa : 385  
rack travel mm : 12.40  
Tolerance mm : ± 0.20

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 900  
Rated speed rpm : 600

Del. quantity  
cm<sup>3</sup>/1000 strokes : 222.50  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 156.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.10  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 215.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 30.00

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.50  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 35.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet





BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
Combination No. : 0 402 746 852  
Injection pump  
Pump designation : PES6P120A720RS7157  
EP type number : 0 412 726 814  
Governor  
Governor design. : RQV325...900PA909K  
Governor no. : 0 421 815 210  
Cust. part No. : 313GC5185-P6

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : E7-400  
Power KW : 298.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 011  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
Test nozzle holde  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.00  
x inside diameter : 2.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Firing order : 1- 5- 3- 6- 2  
                  : - 4  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Start of delivery mark  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900  
Rack travel in mm : 15.85  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 276.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00  
Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325.0

Rack travel in mm : 5.20  
 Tolerance mm : ± 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 43.00  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.00  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 5.00  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
 guide sleeve  
 travel mm : 1.30  
 Tolerance mm : ± 0.10

Rated speed rpm : 450  
 guide sleeve  
 travel mm : 3.00  
 Tolerance mm : ± 0.20

Rated speed rpm : 650  
 guide sleeve  
 travel mm : 5.70  
 Tolerance mm : ± 0.10

Rated speed rpm : 900  
 guide sleeve  
 travel mm : 8.40  
 Tolerance mm : ± 0.10

Rated speed rpm : 1100  
 guide sleeve  
 travel mm : 10.55  
 Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever  
 position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
 Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 276.00  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.00  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.00  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 62.0  
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 14.80  
 Rated speed rpm : 945.0  
 Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
 Rated speed rpm : 1120.0  
 Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1200

LOW IDLE

control lever  
 position degree : 11.0  
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
 rack travel mm : 5.2

Rated speed rpm : 275

CRT mm min. : 6.30

Testing:

Rated speed rpm : 325  
rack travel mm : 5.20  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 15.85  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 625  
rack travel mm : 15.30  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 700  
rack travel mm : 15.50  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 500  
rack travel mm : 6.75  
Tolerance mm :  $\pm 6.75$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 900  
Pressure hPa : 1200  
rack travel mm : 15.85  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Rated speed rpm : 900  
  
rack travel mm : 8.70  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 325  
rack travel mm : 10.25  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 790  
rack travel mm : 14.00  
Tolerance mm :  $\pm 0.20$

---

Start interlock

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Rated speed rpm : 275

Check  
speed 1/min : 285

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 625  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 305.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 6.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.10  
Tolerance mm :  $\pm 0.30$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0  
  
Rack travel in mm : 5.20  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
Combination No. : 0 402 746 853  
Injection pump  
Pump designation : PES6P120A72ORS7157  
EP type number : 0 412 726 814  
Governor  
Governor design. : RQV325...900PA909  
: -1K  
Governor no. : 0 421 815 211  
Cust. part No. : 313GC5185-P2

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : E7-350  
Power kW : 261.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 011  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Firing order : 1- 5- 3- 6- 2  
: - 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Start of delivery mark  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900  
Rack travel in mm : 13.65  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 232.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 3.00  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325.0

Rack travel in mm : 4.80  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.00  
Tolerance mm : ± 0.20

Rated speed rpm : 650  
guide sleeve  
travel mm : 5.70  
Tolerance mm : ± 0.10

Rated speed rpm : 900  
guide sleeve  
travel mm : 8.40  
Tolerance mm : ± 0.10

Rated speed rpm : 1100  
guide sleeve  
travel mm : 10.55  
Tolerance mm : ± 0.25

---

GUIDE SLEEVE POSITION

control lever  
position degree : -1

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 232.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 62.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.60  
Rated speed rpm : 945.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1095.0  
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1200

---

LOW IDLE

control lever  
position degree : 11.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 5.90

Testing:

Rated speed rpm : 325  
rack travel mm : 4.80  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 13.65  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 625  
rack travel mm : 13.40  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 500  
rack travel mm : 6.00  
Tolerance mm :  $\pm 6.00$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 900  
Pressure hPa : 1200  
rack travel mm : 13.65  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Rated speed rpm : 900  
rack travel mm : 8.20  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 325  
rack travel mm : 9.45  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 685  
rack travel mm : 12.30  
Tolerance mm :  $\pm 0.20$

---

Start interlock

Rated speed rpm : 275

Check  
speed 1/min : 285

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 625  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 266.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$   
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.60  
Tolerance mm :  $\pm 0.30$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.80  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.02.90  
Test oil : ISO-4113  
Combination No. : 0 402 746 856  
Injection pump  
Pump designation : PES6P130A320LS7173  
EP type number : 0 412 736 802  
Governor  
Governor design. : RQV300...750PA914  
Governor no. : 0 421 813 747

Cust. part No. :

---

Customer-spec. information  
Customer : SSCM  
Motor : UD25-L6

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.50  
Test nozzle holder  
assembly : 0 681 443 022  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 060  
Outside diameter : 8.00  
x inside diameter : 4.00  
x length mm : 1000

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 4- 2- 6- 3  
                  : - 5  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Start of delivery mark  
Barrel no. : 1

---

## BASIC SETTING

Rated speed rpm : 750  
Rack travel in mm : 12.35  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 481.50  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.50  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00  
Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

Rated speed rpm : 300.0

Rack travel in mm : 5.00  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 7.00

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.30  
Tolerance mm : ± 0.20

Rated speed rpm : 600  
guide sleeve  
travel mm : 5.40  
Tolerance mm : ± 0.30

Rated speed rpm : 750  
guide sleeve  
travel mm : 7.80  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

---

GUIDE SLEEVE POSITION

control lever  
position degree : -1  
Rated speed rpm : 800

Rack travel in mm : 16.50

E02

Tolerance mm : ± 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 481.50

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.50  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

CONTROL LEVER

control lever  
position degree : 122.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 16.5  
Rated speed rpm : 800

rack travel mm : 11.30  
Rated speed rpm : 795.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 855.0  
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

---

LOW IDLE

control lever  
position degree : 65.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 300  
rack travel mm : 5.0

Rated speed rpm : 100

CRT mm min. : 6.50

Testing:

Rated speed rpm : 300  
rack travel mm : 5.00  
Tolerance mm :  $\pm 0.30$

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 750  
rack travel mm : 12.35  
Tolerance mm :  $\pm 0.05$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100

---

LOW IDLE

Rated speed rpm : 300.0

Rack travel in mm : 5.00  
Tolerance mm :  $\pm 0.30$

Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.00

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 7.00$

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0

Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
Combination No. : 0 402 746 861  
Injection pump  
Pump designation : PES6P120A720RS7183  
EP type number : 0 412 726 825  
Governor  
Governor design. : RQV325...875PA848  
                  : -26K  
Governor no. : 0 421 815 212  
Cust. part No. : 313GC5174-P6

---

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : EM 6-300L  
Power KW : 183.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 011  
Inlet press. bar : 1.50  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
Test nozzle holde  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test Lines : 1 680 750 008

E04

Outside diameter : 6.00  
x inside diameter : 2.00  
x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 7.00  
Tolerance mm : ± 1.00  
Firing order : 1- 5- 3- 6- 2  
                  : - 4  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Start of delivery mark  
Barrel no. : 1

---

## BASIC SETTING

Rated speed rpm : 875  
Rack travel in mm : 11.25  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 44.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 2.65  
Tolerance mm : ± 0.15

Rated speed rpm : 600  
guide sleeve  
travel mm : 4.20  
Tolerance mm : ± 0.10

Rated speed rpm : 875  
guide sleeve  
travel mm : 7.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 8.40

Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875

Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 59.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.20  
Rated speed rpm : 920.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1015.0  
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1150

LOW IDLE

control lever  
position degree : 14.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 6.30

Testing:

Rated speed rpm : 325  
rack travel mm : 4.80  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 875  
rack travel mm : 11.25  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 510  
rack travel mm : 16.70  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 700  
rack travel mm : 13.30  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 600  
rack travel mm : 15.40  
Tolerance mm :  $\pm 0.20$

Rated speed rpm : 420  
rack travel mm : 8.30  
Tolerance mm :  $\pm 8.30$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 510  
Pressure hPa : 1500  
rack travel mm : 16.70  
Tolerance mm :  $\pm 0.10$

MEASUREMENT

Rated speed rpm : 510  
rack travel mm : 8.90  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 435

E06

rack travel mm : 10.90  
Tolerance mm :  $\pm 0.10$

Pressure hPa : 795  
rack travel mm : 14.80  
Tolerance mm :  $\pm 0.20$

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 510  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 311.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 156.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 8.90  
Tolerance mm :  $\pm 0.20$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 160.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 10.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 15.00$

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.80  
Tolerance mm :  $\pm 0.10$

Del. quantity  
cm<sup>3</sup>/1000 strokes : 44.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 5.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
  
Combination No. : 0 402 746 862  
  
Injection pump  
Pump designation : PES6P120A720RS7183  
EP type number : 0 412 726 825

Governor  
Governor design. : RQV325...875PA878  
                  : -11K  
Governor no. : 0 421 815 213

Cust. part No. : 313GC5174-P8

---

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : EM 6-300L  
Power KW : 183.0

---

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

E08

Outside diameter : 6.00  
x inside diameter : 2.00  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 7.00  
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2  
                  : - 4

Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

---

BASIC SETTING

Rated speed rpm : 875

---

Rack travel in mm : 11.25  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.00

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00



Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.70

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 44.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 2.65  
Tolerance mm : ± 0.15

Rated speed rpm : 600  
guide sleeve  
travel mm : 4.20  
Tolerance mm : ± 0.10

Rated speed rpm : 875  
guide sleeve  
travel mm : 7.40  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 8.85

Tolerance mm : ± 0.15

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 210.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 59.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.20  
Rated speed rpm : 920.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1015.0  
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1150

LOW IDLE

control lever  
position degree : 14.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.7

Rated speed rpm : 275

CRT mm min. : 6.30

Testing:

Rated speed rpm : 325  
rack travel mm : 4.70  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 875  
rack travel mm : 11.25  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 510  
rack travel mm : 16.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 700  
rack travel mm : 13.40  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 600  
rack travel mm : 15.60  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 450  
rack travel mm : 8.30  
Tolerance mm :  $\pm$  8.30

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 510  
Pressure hPa : 1500  
rack travel mm : 16.70  
Tolerance mm :  $\pm$  0.10

MEASUREMENT

Rated speed rpm : 510  
rack travel mm : 8.90  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 435

E10

rack travel mm : 10.90  
Tolerance mm :  $\pm$  0.10  
Pressure hPa : 795  
rack travel mm : 14.80  
Tolerance mm :  $\pm$  0.20

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 510  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 311.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 156.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.00

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 8.90  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 185.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  25.00

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.70  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 44.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113

Combination No. : 0 402 746 866

Injection pump  
Pump designation : PES6P120A720RS7157  
EP type number : 0 412 726 814

Governor  
Governor design. : RQV325...875PA909  
: -2K  
Governor no. : 0 421 815 217

Cust. part No. : 313GC5185-P10

---

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : EM7-300L  
Power KW : 224.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

---

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2  
: - 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

---

## BASIC SETTING

Rated speed rpm : 875

---

Rack travel in mm : 12.65  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.00

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.00

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.90  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : + 5.00

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : + 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.00  
Tolerance mm : + 0.20

Rated speed rpm : 650  
guide sleeve  
travel mm : 5.70  
Tolerance mm : + 0.10

Rated speed rpm : 900  
guide sleeve  
travel mm : 8.40  
Tolerance mm : + 0.10

Rated speed rpm : 1100  
guide sleeve  
travel mm : 10.55  
Tolerance mm : + 0.25

#### GUIDE SLEEVE POSITION

control lever  
position degree : -1

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : + 3.00  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### CONTROL LEVER

control lever  
position degree : 61.0  
tolerance degree : + 4.0

#### RATED SPEED

rack travel mm : 11.60  
Rated speed rpm : 920.0  
Tolerance 1/min : + 5.0

rack travel mm : 4.00  
Rated speed rpm : 1065.0  
Tolerance 1/min : + 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1200

#### LOW IDLE

control lever  
position degree : 11.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.9

Rated speed rpm : 275

CRT mm min. : 6.00

Testing:

Rated speed rpm : 325  
rack travel mm : 4.90  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 875  
rack travel mm : 12.65  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 510  
rack travel mm : 13.70  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 400  
rack travel mm : 6.50  
Tolerance mm :  $\pm 6.50$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 510  
Pressure hPa : 1200  
rack travel mm : 13.65  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Rated speed rpm : 510  
  
rack travel mm : 8.30  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 370  
rack travel mm : 9.55  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 740  
rack travel mm : 12.50  
Tolerance mm :  $\pm 0.20$

---

Start interlock

Rated speed rpm : 275

Check  
speed 1/min : 285

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 510  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 294.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.70  
Tolerance mm :  $\pm 0.30$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.90  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.03.90  
Test oil : ISO-4113

Combination No. : 0 402 746 867

Injection pump  
Pump designation : PES6P120A72ORS7164  
EP type number : 0 412 726 816

Governor  
Governor design. : RQV325...900PA848  
                  : -27K  
Governor no. : 0 421 815 218

Cust. part No. : 313GC5181P10

---

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : EC6-350 4VH  
Power KW : 261.0

---

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity  
min. L/h : 165.0  
Tolerance L/h : ± 5.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 12.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2  
                  : - 4

Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

---

BASIC SETTING

Rated speed rpm : 900

---

Rack travel in mm : 16.05  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 256.00

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00



Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.40  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.20  
Tolerance mm : ± 0.20

Rated speed rpm : 850  
guide sleeve  
travel mm : 6.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.60  
Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 256.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 59.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 15.00  
Rated speed rpm : 955.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1120.0  
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1200

LOW IDLE

control lever  
position degree : 14.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.4

Rated speed rpm : 275  
CRT mm min. : 5.90  
Testing:  
Rated speed rpm : 325  
rack travel mm : 4.40  
Tolerance mm :  $\pm 0.10$   
  
rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 16.05  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 625  
rack travel mm : 16.60  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 550  
rack travel mm : 8.20  
Tolerance mm :  $\pm 8.20$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 625  
Pressure hPa : 1200  
rack travel mm : 16.60  
Tolerance mm :  $\pm 0.10$

MEASUREMENT

Rated speed rpm : 625  
  
rack travel mm : 9.60  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 265  
rack travel mm : 11.35  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 665  
rack travel mm : 14.90  
Tolerance mm :  $\pm 0.20$

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 625  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 283.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 143.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 9.60  
Tolerance mm :  $\pm 0.20$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0  
  
Rack travel in mm : 4.40  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
  
Combination No. : 0 402 746 868  
  
Injection pump  
Pump designation : PES6P120A720RS7164  
EP type number : 0 412 726 816  
  
Governor  
Governor design. : RQV325...875PA848  
                  : -28K  
Governor no. : 0 421 815 219  
  
Cust. part No. : 313GC5181P6

---

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : EM6-275L 4VH  
Power KW : 205.0

---

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 011  
  
Inlet press. bar : 1.50  
  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
  
Test nozzle holde  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 008

E20

Outside diameter : 6.00  
x inside diameter : 2.00  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 12.50  
Tolerance mm : ± 0.50  
  
Firing order : 1- 5- 3- 6- 2  
                  : - 4  
  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery mark  
  
Barrel no. : 1

---

BASIC SETTING

Rated speed rpm : 875  
  
Rack travel in mm : 13.65  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 194.00  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.00

---

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325.0

Rack travel in mm : 4.90  
Tolerance mm : + 0.20

Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : + 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 2.95  
Tolerance mm : + 0.15

Rated speed rpm : 850  
guide sleeve  
travel mm : 6.30  
Tolerance mm : + 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.80  
Tolerance mm : + 0.10

---

GUIDE SLEEVE POSITION

E21

control lever  
position degree : -1

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875

Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 194.00

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 61.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.60  
Rated speed rpm : 920.0  
Tolerance 1/min : + 5.0

rack travel mm : 4.00  
Rated speed rpm : 1060.0  
Tolerance 1/min : + 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1150

---

LOW IDLE

control lever  
position degree : 14.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.9

Rated speed rpm : 275

CRT mm min. : 6.20

Testing:

Rated speed rpm : 325  
rack travel mm : 4.90  
Tolerance mm :  $\pm 0.20$

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 875  
rack travel mm : 13.65  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 510  
rack travel mm : 15.50  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 750  
rack travel mm : 14.05  
Tolerance mm :  $\pm 0.15$

Rated speed rpm : 600  
rack travel mm : 15.20  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 420  
rack travel mm : 7.60  
Tolerance mm :  $\pm 7.60$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 510  
Pressure hPa : 1200  
rack travel mm : 15.50  
Tolerance mm :  $\pm 0.10$

MEASUREMENT

Rated speed rpm : 510  
rack travel mm : 10.90  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 265  
rack travel mm : 12.15  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 450  
rack travel mm : 14.40

Tolerance mm :  $\pm 0.20$

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 510  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 264.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 5.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 154.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.90  
Tolerance mm :  $\pm 0.20$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.90  
Tolerance mm :  $\pm 0.20$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 5.00$

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
Combination No. : 0 402 746 868AA  
Injection pump  
Pump designation : PES6P120A72ORS7164  
EP type number : 0 412 726 816  
Governor  
Governor design. :  
Governor no. : 0 421 815 ...

Cust. part No. : 313GC...

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : EM6-275L 4VH  
Power KW : 205.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 011  
Inlet press. bar : 1.50  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
Test nozzle holde  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008

Outside diameter : 6.00  
x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 12.50  
Tolerance mm : ± 0.50  
Firing order : 1- 5- 3- 6- 2  
                  : - 4  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Start of delivery mark  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875  
Rack travel in mm : 13.65  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 197.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00



Check tolerance  
cm<sup>3</sup>/1000S. : + 3.00

---

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325.0

Rack travel in mm : 4.90  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.25  
Tolerance mm : + 0.15

Rated speed rpm : 450  
guide sleeve  
travel mm : 2.05  
Tolerance mm : + 0.15

Rated speed rpm : 850  
guide sleeve  
travel mm : 6.50  
Tolerance mm : + 0.20

Rated speed rpm : 1000  
guide sleeve  
travel mm : 9.70  
Tolerance mm : + 0.20

---

GUIDE SLEEVE POSITION

control lever  
position degree : -1

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 197.00

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 62.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.20  
Rated speed rpm : 920.0  
Tolerance 1/min : + 5.0

rack travel mm : 4.00  
Rated speed rpm : 975.0  
Tolerance 1/min : + 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1050

---

LOW IDLE

control lever  
position degree : 14.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.9

Rated speed rpm : 275  
CRT mm min. : 6.30  
Testing:  
Rated speed rpm : 325  
rack travel mm : 4.90  
Tolerance mm : ± 0.10

---

TORQUE CONTROL

Rated speed rpm : 875  
rack travel mm : 13.65  
Tolerance mm : ± 0.05

Rated speed rpm : 510  
rack travel mm : 15.30  
Tolerance mm : ± 0.10

Rated speed rpm : 750  
rack travel mm : 14.05  
Tolerance mm : ± 0.15

Rated speed rpm : 420  
rack travel mm : 7.60  
Tolerance mm : ± 7.60

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 510  
Pressure hPa : 1200  
rack travel mm : 15.30  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 510  
rack travel mm : 10.90  
Tolerance mm : ± 0.20

Pressure hPa : 265  
rack travel mm : 12.15  
Tolerance mm : ± 0.05

Pressure hPa : 450  
rack travel mm : 14.20  
Tolerance mm : ± 0.20

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 510  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 262.50  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 154.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.90  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 30.00

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.90  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
  
Combination No. : 0 402 746 869  
  
Injection pump  
Pump designation : PES6P120A720RS7164  
EP type number : 0 412 726 816  
  
Governor  
Governor design. : RQV325...875PA848  
                  : -29K  
Governor no. : 0 421 815 220  
  
Cust. part No. : 313GC5181P4

Customer-spec. information

Customer : MACK TRUCKS  
Motor : EMC6 250L 4VH  
Power KW : 196.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 011  
  
Inlet press. bar : 1.50  
  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
  
Test nozzle holde  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 008

E28

Outside diameter : 6.00  
x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 12.50  
Tolerance mm : ± 0.50  
  
Firing order : 1- 5- 3- 6- 2  
                  : - 4  
  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery mark  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875  
  
Rack travel in mm : 13.05  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 185.00  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : +- 3.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80  
Tolerance mm : +- 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : +- 5.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : +- 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.00  
Tolerance mm : +- 0.20

Rated speed rpm : 850  
guide sleeve  
travel mm : 6.30  
Tolerance mm : +- 0.10

Rated speed rpm : 1000  
guide sleeve  
travel mm : 7.80  
Tolerance mm : +- 0.10

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875  
Aneroid pressure  
hPa : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 185.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 3.00  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 59.0  
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.00  
Rated speed rpm : 920.0  
Tolerance 1/min : +- 5.0

rack travel mm : 4.00  
Rated speed rpm : 1050.0  
Tolerance 1/min : +- 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 1150

LOW IDLE

control lever  
position degree : 14.0  
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.8

Rated speed rpm : 275  
CRT mm min. : 5.90  
Testing:  
Rated speed rpm : 325  
rack travel mm : 4.80  
Tolerance mm :  $\pm$  0.10  
rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 875  
rack travel mm : 13.05  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 510  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 650  
rack travel mm : 14.05  
Tolerance mm :  $\pm$  0.15

Rated speed rpm : 450  
rack travel mm : 7.35  
Tolerance mm :  $\pm$  7.35

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 510  
Pressure hPa : 900  
rack travel mm : 15.00  
Tolerance mm :  $\pm$  0.10

MEASUREMENT

Rated speed rpm : 510  
rack travel mm : 10.60  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 205  
rack travel mm : 11.75  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 460  
rack travel mm : 14.10  
Tolerance mm :  $\pm$  0.20

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 900  
Rated speed rpm : 510  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 154.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.00

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.60  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 180.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  30.00

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.80  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.00  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113

Combination No. : 0 402 746 870

Injection pump  
Pump designation : PES6P120A720RS7157  
EP type number : 0 412 726 814

Governor  
Governor design. : RQV325...875PA878  
: -14K

Governor no. : 0 421 815 222

Cust. part No. : 313GC5179-P28

Customer-spec. information

Customer : MACK  
Motor : EM7-250L 4VH  
Power KW : 187.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2  
: - 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 10.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.00

Speed



Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325.0

Rack travel in mm : 4.80  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.45  
Tolerance mm : ± 0.15

Rated speed rpm : 500  
guide sleeve  
travel mm : 3.70  
Tolerance mm : ± 0.30

Rated speed rpm : 900  
guide sleeve  
travel mm : 6.80  
Tolerance mm : ± 0.10

Rated speed rpm : 1075  
guide sleeve  
travel mm : 8.65  
Tolerance mm : ± 0.25

---

GUIDE SLEEVE POSITION

control lever  
position degree : -1

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875  
Aneroid pressure  
hPa : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 58.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.40  
Rated speed rpm : 920.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1035.0  
Tolerance 1/min : ± 15.0

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1200

---

LOW IDLE

control lever  
position degree : 16.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 6.30

Testing:

Rated speed rpm : 325  
rack travel mm : 4.80  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 875  
rack travel mm : 10.45  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 510  
rack travel mm : 12.00  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 450  
rack travel mm : 5.90  
Tolerance mm :  $\pm 5.90$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 510  
Pressure hPa : 900  
rack travel mm : 12.00  
Tolerance mm :  $\pm 0.10$

MEASUREMENT

Rated speed rpm : 510  
rack travel mm : 8.00  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 235  
rack travel mm : 8.85  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 485  
rack travel mm : 11.00  
Tolerance mm :  $\pm 0.20$

---

Start interlock

Rated speed rpm : 275

Check  
speed 1/min : 285

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 900  
Rated speed rpm : 510  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 247.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$   
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 153.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.20  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.80  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$   
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
 Test oil : ISO-4113  
 Combination No. : 0 402 746 871  
 Injection pump  
 Pump designation : PES6P120A720RS7157  
 EP type number : 0 412 726 814  
 Governor  
 Governor design. : RQV325...900PA929K  
 Governor no. : 0 421 815 223  
 Cust. part No. : 313GC5185-P8

Customer-spec. information  
 Customer : MACK TRUCKS  
 Motor : E7-400  
 Power KW : 298.0

TEST BENCH REQUIREMENTS

Test oil inlet  
 temp. °C : 40.0  
 Tolerance °C : ± 2.0  
 Overflow valve : 2 417 413 011  
 Overflow quantity  
 min. L/h : 165.0  
 Tolerance L/h : ± 5.0  
 Test nozzle holde  
 assembly : 1 688 901 101  
 Opening pressure  
 bar : 208.5  
 Tolerance bar : ± 1.5  
 Test lines : 1 680 750 008  
 Outside diameter : 6.00  
 x inside diameter : 2.00

F08

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
 Set equal delivery quant.  
 per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
 Tolerance bar : ± 1.0  
 Prestroke mm : 2.80  
 Tolerance mm : ± 0.05  
 Check  
 tolerance mm : ± 0.10  
 Firing order : 1- 5- 3- 6- 2  
 : - 4  
 Phasing : 0-60-120-180-240  
 : -300  
 Tolerance : ± 0.50  
 Check  
 tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900  
 Rack travel in mm : 15.85  
 Tolerance mm : ± 0.05  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 276.00  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.00  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.00  
 Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325.0

Rack travel in mm : 5.20  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.00  
Tolerance mm : ± 0.20

Rated speed rpm : 650  
guide sleeve  
travel mm : 5.70  
Tolerance mm : ± 0.10

Rated speed rpm : 900  
guide sleeve  
travel mm : 8.40  
Tolerance mm : ± 0.10

Rated speed rpm : 1100  
guide sleeve  
travel mm : 10.55  
Tolerance mm : ± 0.25

---

GUIDE SLEEVE POSITION

control lever  
position degree : -1

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 276.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 62.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 14.80  
Rated speed rpm : 945.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1120.0  
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1200

---

LOW IDLE

control lever  
position degree : 11.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 5.2

Rated speed rpm : 275

CRT mm min. : 6.30

Testing:

Rated speed rpm : 325  
rack travel mm : 5.20  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 15.85  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 625  
rack travel mm : 15.30  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 700  
rack travel mm : 15.50  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 500  
rack travel mm : 6.75  
Tolerance mm :  $\pm 6.75$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 900  
Pressure hPa : 1200  
rack travel mm : 15.85  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Rated speed rpm : 900  
  
rack travel mm : 8.70  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 325  
rack travel mm : 10.25  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 790  
rack travel mm : 14.00  
Tolerance mm :  $\pm 0.20$

---

Start interlock

F10

Rated speed rpm : 275

Check  
speed 1/min : 285

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 625  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 305.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.10  
Tolerance mm :  $\pm 0.30$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 5.20  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 5.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
Combination No. : 0 402 746 872  
Injection pump  
Pump designation : PES6P120A720RS7157  
EP type number : 0 412 726 814  
Governor  
Governor design. : RQV325...900PA929  
: -1K  
Governor no. : 0 421 815 224  
Cust. part No. : 313GC5185-P4

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : E7-350  
Power KW : 261.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 011  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Firing order : 1- 5- 3- 6- 2  
: - 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Start of delivery mark  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900  
Rack travel in mm : 13.65  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 232.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.00  
Speed



Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325.0

Rack travel in mm : 4.80  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : + 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.00  
Tolerance mm : + 0.20

Rated speed rpm : 650  
guide sleeve  
travel mm : 5.70  
Tolerance mm : + 0.10

Rated speed rpm : 900  
guide sleeve  
travel mm : 8.40  
Tolerance mm : + 0.10

Rated speed rpm : 1100  
guide sleeve  
travel mm : 10.55  
Tolerance mm : + 0.25

---

GUIDE SLEEVE POSITION

control lever  
position degree : -1

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 232.00

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 62.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.60  
Rated speed rpm : 945.0  
Tolerance 1/min : + 5.0

rack travel mm : 4.00  
Rated speed rpm : 1095.0  
Tolerance 1/min : + 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1200

---

LOW IDLE

control lever  
position degree : 11.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 5.90

Testing:

Rated speed rpm : 325  
rack travel mm : 4.80  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 900  
rack travel mm : 13.65  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 625  
rack travel mm : 13.40  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 500  
rack travel mm : 6.00  
Tolerance mm :  $\pm 6.00$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 900  
Pressure hPa : 1200  
rack travel mm : 13.65  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Rated speed rpm : 900  
rack travel mm : 8.20  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 325  
rack travel mm : 9.45  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 685  
rack travel mm : 12.30  
Tolerance mm :  $\pm 0.20$

---

Start interlock

Rated speed rpm : 275

Check  
speed 1/min : 285

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 625  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 266.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$   
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 155.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.60  
Tolerance mm :  $\pm 0.30$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 190.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.80  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
Combination No. : 0 402 746 873  
Injection pump  
Pump designation : PES6P120A72GRS7157  
EP type number : 0 412 726 814  
Governor  
Governor design. : RQV325...875PA929  
                  : -2K  
Governor no. : 0 421 815 225  
Cust. part No. : 3136C5185-P12

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : EM7-300L  
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 011  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
Test nozzle holde  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2  
                  : - 4  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75  
Start of delivery mark  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875  
Rack travel in mm : 12.65  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.90  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.00  
Tolerance mm : ± 0.20

Rated speed rpm : 650  
guide sleeve  
travel mm : 5.70  
Tolerance mm : ± 0.10

Rated speed rpm : 900  
guide sleeve  
travel mm : 8.40  
Tolerance mm : ± 0.10

Rated speed rpm : 1100  
guide sleeve  
travel mm : 10.55  
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875  
Aneroid pressure

hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 61.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.60  
Rated speed rpm : 920.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1065.0  
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1200

LOW IDLE

control lever  
position degree : 11.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.9

Rated speed rpm : 275

CRT mm min. : 6.00

Testing:

Rated speed rpm : 325  
rack travel mm : 4.90  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 875  
rack travel mm : 12.65  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 510  
rack travel mm : 13.70  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 400  
rack travel mm : 6.50  
Tolerance mm :  $\pm 6.50$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 510  
Pressure hPa : 1200  
rack travel mm : 13.70  
Tolerance mm :  $\pm 0.10$

MEASUREMENT

Rated speed rpm : 510  
rack travel mm : 8.30  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 370  
rack travel mm : 9.55  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 740  
rack travel mm : 12.50  
Tolerance mm :  $\pm 0.20$

---

Start interlock

Rated speed rpm : 275

Check  
speed 1/min : 285

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure

hPa : 1200

Rated speed rpm : 510

Del. quantity  
cm<sup>3</sup>/1000 strokes : 294.50

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00

Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400

Del. quantity  
cm<sup>3</sup>/1000 strokes : 159.50

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.70  
Tolerance mm :  $\pm 0.30$

Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.00

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.90  
Tolerance mm :  $\pm 0.10$

Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113

Combination No. : 0 402 746 874

Injection pump  
Pump designation : PES6P120A720RS7157  
EP type number : 0 412 726 814

Governor  
Governor design. : RQV325...850PA909  
: -3K  
Governor no. : 0 421 815 230

Cust. part No. : 3136C5185-P14

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : E7-300  
Power KW : 220.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2  
: - 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.25  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.00

Speed



Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325.0

Rack travel in mm : 4.80  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.00  
Tolerance mm : ± 0.20

Rated speed rpm : 650  
guide sleeve  
travel mm : 5.70  
Tolerance mm : ± 0.10

Rated speed rpm : 900  
guide sleeve  
travel mm : 8.40  
Tolerance mm : ± 0.10

Rated speed rpm : 1100  
guide sleeve  
travel mm : 10.55  
Tolerance mm : ± 0.25

---

GUIDE SLEEVE POSITION

F21

control lever  
position degree : -1

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure  
hPa : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.00  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 55.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.20  
Rated speed rpm : 895.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1045.0  
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1150

---

LOW IDLE

control lever  
position degree : 9.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.8

Rated speed rpm : 275  
CRT mm min. : 6.10

Testing:

Rated speed rpm : 325  
rack travel mm : 4.80  
Tolerance mm :  $\pm 0.10$   
  
rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 12.25  
Tolerance mm :  $\pm 0.05$   
  
Rated speed rpm : 600  
rack travel mm : 12.50  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 500  
rack travel mm : 5.55  
Tolerance mm :  $\pm 5.55$

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
Pressure hPa : 1200  
rack travel mm : 12.50  
Tolerance mm :  $\pm 0.10$

MEASUREMENT

Rated speed rpm : 600  
  
rack travel mm : 7.90  
Tolerance mm :  $\pm 0.20$   
  
Pressure hPa : 265  
rack travel mm : 9.05  
Tolerance mm :  $\pm 0.05$   
  
Pressure hPa : 565  
rack travel mm : 11.40  
Tolerance mm :  $\pm 0.20$

Start interlock

Rated speed rpm : 275

Check  
speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 244.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 5.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 4.00$

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.30  
Tolerance mm :  $\pm 0.30$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 30.00$

LOW IDLE

Rated speed rpm : 325.0  
  
Rack travel in mm : 4.80  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000s. :  $\pm 5.00$

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
Combination No. : 0 402 746 875  
Injection pump  
Pump designation : PES6P120A720RS7157  
EP type number : 0 412 726 814  
Governor  
Governor design. : RQV325...975PA909  
                  : -4K  
Governor no. : 0 421 815 231  
Cust. part No. : 313GC5185-P18

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : E7-300A  
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 011  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Firing order : 1- 5- 3- 6- 2  
                  : - 4  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Start of delivery mark  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 975  
Rack travel in mm : 12.35  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.00  
Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325.0

Rack travel in mm : 4.80  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
guide sleeve  
travel mm : 0.75  
Tolerance mm : ± 0.25

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.60  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.10  
Tolerance mm : ± 0.20

Rated speed rpm : 1000  
guide sleeve  
travel mm : 8.50  
Tolerance mm : ± 0.10

Rated speed rpm : 1200  
guide sleeve  
travel mm : 10.40  
Tolerance mm : ± 0.20

---

GUIDE SLEEVE POSITION

control lever  
position degree : -1

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 975  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.00

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 58.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.30  
Rated speed rpm : 1020.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1160.0  
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1250

---

LOW IDLE

control lever  
position degree : 12.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 6.10

Testing:

Rated speed rpm : 325  
rack travel mm : 4.80  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 975  
rack travel mm : 12.35  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 600  
rack travel mm : 11.80  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 500  
rack travel mm : 5.75  
Tolerance mm :  $\pm 5.75$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 975  
Pressure hPa : 1200  
rack travel mm : 12.35  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Rated speed rpm : 975  
rack travel mm : 7.90  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 235  
rack travel mm : 9.05  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 460  
rack travel mm : 11.00  
Tolerance mm :  $\pm 0.20$

---

Start interlock

Rated speed rpm : 275

Check  
speed 1/min : 285

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 224.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 148.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.30  
Tolerance mm :  $\pm 0.30$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.80  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
Combination No. : 0 402 746 876  
Injection pump  
Pump designation : PES6P120A72URS7157  
EP type number : 0 412 726 814  
Governor  
Governor design. : RQV325...850PA929  
                  : -3K  
Governor no. : 0 421 815 232  
Cust. part No. : 313GC5185-P16

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : E7-300 4VH  
Power KW : 220.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 011  
Overflow quantity  
min. L/h : 165.0  
Tolerance L/h : ± 5.0  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Firing order : 1- 5- 3- 6- 2  
                  : - 4  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Start of delivery mark  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850  
Rack travel in mm : 12.25  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.00  
Speed



Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325.0

Rack travel in mm : 4.80  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.30  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.00  
Tolerance mm : ± 0.20

Rated speed rpm : 650  
guide sleeve  
travel mm : 5.70  
Tolerance mm : ± 0.10

Rated speed rpm : 900  
guide sleeve  
travel mm : 8.40  
Tolerance mm : ± 0.10

Rated speed rpm : 1100  
guide sleeve  
travel mm : 10.55  
Tolerance mm : ± 0.25

---

GUIDE SLEEVE POSITION

G01

control lever  
position degree : -1

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 55.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.20  
Rated speed rpm : 895.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1055.0  
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1150

---

LOW IDLE

control lever  
position degree : 11.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 6.30

Testing:

Rated speed rpm : 325  
rack travel mm : 4.80  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 12.25  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 600  
rack travel mm : 12.60  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 500  
rack travel mm : 5.55  
Tolerance mm :  $\pm 5.55$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600  
Pressure hPa : 1200  
rack travel mm : 12.60  
Tolerance mm :  $\pm 0.10$

MEASUREMENT

Rated speed rpm : 600  
rack travel mm : 7.90  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 265  
rack travel mm : 9.05  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 565  
rack travel mm : 11.40  
Tolerance mm :  $\pm 0.20$

---

Start interlock

Rated speed rpm : 275

Check  
speed 1/min : 285

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 244.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.30  
Tolerance mm :  $\pm 0.30$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.80  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.02.90  
Test oil : ISO-4113  
Combination No. : 0 402 746 877  
Injection pump  
Pump designation : PES6P120A72ORS7157  
EP type number : 0 412 726 814  
Governor  
Governor design. : RQV325...975PA929  
                  : -4K  
Governor no. : 0 421 815 233  
Cust. part No. : 313GC5185-P20

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : E7-300A  
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 011  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Firing order : 1- 5- 3- 6- 2  
                  : - 4  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Start of delivery mark  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 975  
Rack travel in mm : 12.35  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 3.00  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325.0

Rack travel in mm : 4.80  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
guide sleeve  
travel mm : 0.75  
Tolerance mm : ± 0.25

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.60  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.10  
Tolerance mm : ± 0.20

Rated speed rpm : 1000  
guide sleeve  
travel mm : 8.50  
Tolerance mm : ± 0.10

Rated speed rpm : 1200  
guide sleeve  
travel mm : 10.40  
Tolerance mm : ± 0.20

---

GUIDE SLEEVE POSITION

G05

control lever  
position degree : -1

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 975  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.00

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 58.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.30  
Rated speed rpm : 1020.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1180.0  
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1250

---

LOW IDLE

control lever  
position degree : 12.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 6.10

Testing:

Rated speed rpm : 325  
rack travel mm : 4.80  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 975  
rack travel mm : 12.35  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 600  
rack travel mm : 11.80  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 500  
rack travel mm : 5.75  
Tolerance mm :  $\pm 5.75$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 975  
Pressure hPa : 1200  
rack travel mm : 12.35  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Rated speed rpm : 975  
rack travel mm : 7.90  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 235  
rack travel mm : 9.05  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 570  
rack travel mm : 11.80  
Tolerance mm :  $\pm 0.20$

---

Start interlock

Rated speed rpm : 275

Check speed 1/min : 285

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 224.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$   
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 148.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.30  
Tolerance mm :  $\pm 0.30$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.80  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
Combination No. : 0 402 746 886  
Injection pump  
Pump designation : PES6P120A720RS7157  
EP type number : 0 412 726 814  
Governor  
Governor design. : RQV325...975PA944  
                  : -4K  
Governor no. : 0 421 815 239  
Cust. part No. : 313GC5185-P26

---

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : E7-250A  
Power KW : 186.0

---

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 011  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.00

G08

x inside diameter : 2.00  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Firing order : 1- 5- 3- 6- 2  
                  : - 4  
Phasing : 0-60-120-180-240  
                  : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Start of delivery mark  
Barrel no. : 1

---

BASIC SETTING

Rated speed rpm : 975  
Rack travel in mm : 10.45  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 3.00  
Speed

---



Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325.0

Rack travel in mm : 4.80  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275  
guide sleeve  
travel mm : 0.75  
Tolerance mm : ± 0.25

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.60  
Tolerance mm : ± 0.10

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.10  
Tolerance mm : ± 0.20

Rated speed rpm : 1000  
guide sleeve  
travel mm : 8.50  
Tolerance mm : ± 0.10

Rated speed rpm : 1200  
guide sleeve  
travel mm : 10.40  
Tolerance mm : ± 0.20

---

GUIDE SLEEVE POSITION

control lever  
position degree : -1

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 975  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.00

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 58.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.40  
Rated speed rpm : 1020.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1135.0  
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1250

---

LOW IDLE

control lever  
position degree : 12.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 6.10

#### Testing:

Rated speed rpm : 325  
rack travel mm : 4.80  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00

---

#### TORQUE CONTROL

Rated speed rpm : 975  
rack travel mm : 10.45  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 600  
rack travel mm : 10.90  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 500  
rack travel mm : 5.10  
Tolerance mm :  $\pm 5.10$

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 600  
Pressure hPa : 1200  
rack travel mm : 10.90  
Tolerance mm :  $\pm 0.10$

#### MEASUREMENT

Rated speed rpm : 600  
rack travel mm : 7.70  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 195  
rack travel mm : 8.45  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 375  
rack travel mm : 10.10  
Tolerance mm :  $\pm 0.20$

---

#### Start interlock

Rated speed rpm : 275

Check  
speed 1/min : 285

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 201.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$   
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 148.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 10.30  
Tolerance mm :  $\pm 0.30$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

---

#### LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.80  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.05.90  
Test oil : ISO-4113  
  
Combination No. : 0 402 746 888  
  
Injection pump  
Pump designation : PES6P120A720RS7164  
EP type number : 0 412 726 816  
  
Governor  
Governor design. : RQV325...875PA878  
                  : -15K  
Governor no. : 0 421 815 235  
  
Cust. part No. : 31EGC5181P16

Customer-spec. information  
Customer : MACK TRUCKS  
Motor : EMC6 300L 4VH  
Power KW : 200.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 011  
  
Inlet press. bar : 1.50  
  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
  
Test nozzle holder  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 008

G12

Outside diameter : 6.00  
x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 18.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 12.50  
Tolerance mm : ± 0.50  
  
Firing order : 1- 5- 3- 6- 2  
                  : - 4  
  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery mark  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875  
  
Rack travel in mm : 14.95  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.00  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000s. : ± 3.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000s. : ± 5.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80

Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000s. : ± 5.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000s. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve  
travel mm : 1.30

Tolerance mm : ± 0.10

Rated speed rpm : 450

guide sleeve  
travel mm : 3.20

Tolerance mm : ± 0.20

Rated speed rpm : 850

guide sleeve  
travel mm : 6.00

Tolerance mm : ± 0.10

Rated speed rpm : 1000

guide sleeve  
travel mm : 7.55

Tolerance mm : ± 0.15

GUIDE SLEEVE POSITION

control lever  
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875

Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000s. : ± 3.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000s. : 9.0

CONTROL LEVER

control lever  
position degree : 58.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.90

Rated speed rpm : 920.0

Tolerance 1/min : ± 5.0

rack travel mm : 4.00

Rated speed rpm : 1080.0

Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1160

LOW IDLE

control lever  
position degree : 14.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 5.90

Testing:

Rated speed rpm : 325  
rack travel mm : 4.80  
Tolerance mm :  $\pm$  0.10

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 875  
rack travel mm : 14.95  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 510  
rack travel mm : 16.90  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 700  
rack travel mm : 15.70  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 600  
rack travel mm : 16.50  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 420  
rack travel mm : 8.40  
Tolerance mm :  $\pm$  8.40

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 510  
Pressure hPa : 1200  
rack travel mm : 16.90  
Tolerance mm :  $\pm$  0.10

MEASUREMENT

Rated speed rpm : 510  
rack travel mm : 11.10  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 375  
rack travel mm : 12.75  
Tolerance mm :  $\pm$  0.05

Pressure hPa : 735  
rack travel mm : 15.90

Tolerance mm :  $\pm$  0.20

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 510  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 308.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.00  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 158.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.00

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.10  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 180.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  30.00

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.80  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 42.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.00

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.02.90  
Test oil : ISO-4113  
Combination No. : 0 402 748 801  
Injection pump  
Pump designation : PES8P12DA920/4LS7184  
EP type number : 0 412 728 802  
Governor  
Governor design. : RQV325...950PA848  
                  : -16K  
Governor no. : 0 421 815 196  
Cust. part No. : 313GC5180P2

Customer-spec. information  
Customer : MACK  
Motor : E9 500  
Power KW : 373.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 011  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 23.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 12.00  
Tolerance mm : ± 1.00  
Firing order : 1- 2- 7- 8- 4- 5  
                  : - 6- 3  
Phasing : 0-45-90-135-180-225  
                  : -270-315  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Start of delivery mark  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950  
Rack travel in mm : 15.05  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 231.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00



Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 5.70  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 41.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.45  
Tolerance mm : ± 0.15

Rated speed rpm : 450  
guide sleeve  
travel mm : 2.95  
Tolerance mm : ± 0.15

Rated speed rpm : 800  
guide sleeve  
travel mm : 5.80  
Tolerance mm : ± 0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 7.95  
Tolerance mm : ± 0.15

Rated speed rpm : 1200  
guide sleeve  
travel mm : 9.65  
Tolerance mm : ± 0.15

#### GUIDE SLEEVE POSITION

control lever  
position degree : -1  
Rated speed rpm : 1150

Rack travel in mm : 10.00  
Tolerance mm : ± 3.00

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950  
Aneroid pressure  
hPa : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 231.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

#### CONTROL LEVER

control lever  
position degree : 62.0  
tolerance degree : ± 4.0

#### RATED SPEED

rack travel mm : 10.0  
Rated speed rpm : 1150  
rack travel mm : 14.00  
Rated speed rpm : 995.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1150.0  
Tolerance 1/min : ± 15.0

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1250

#### LOW IDLE

control lever  
position degree : 17.0  
tolerance degree :  $\pm 4.0$

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 5.7

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325  
rack travel mm : 5.70  
Tolerance mm :  $\pm 0.10$

---

TORQUE CONTROL

Rated speed rpm : 950  
rack travel mm : 15.05  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 650  
rack travel mm : 14.60  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 500  
rack travel mm : 7.00  
Tolerance mm :  $\pm 7.00$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 950  
Pressure hPa : 900  
rack travel mm : 15.05  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Rated speed rpm : 950  
  
rack travel mm : 9.20  
Tolerance mm :  $\pm 0.20$

Pressure hPa : 230  
rack travel mm : 10.65  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 535  
rack travel mm : 13.35  
Tolerance mm :  $\pm 0.15$

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---

Start interlock

Rated speed rpm : 270

Check  
speed 1/min : 280

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure

hPa : 900  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 255.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 146.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.30  
Tolerance mm :  $\pm 0.20$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 20.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 30.00$

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 5.70  
Tolerance mm :  $\pm 0.10$

Del. quantity  
cm<sup>3</sup>/1000 strokes : 41.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 23.03.90  
Test oil : ISO-4113  
Combination No. : 0 402 748 802  
Injection pump  
Pump designation : PES8P120A920/4LS7159  
EP type number : 0 412 728 801  
Governor  
Governor design. : RQV325..1050PA848  
: -21K  
Governor no. : 0 421 815 201  
Cust. part No. : 313GC5178P2

Customer-spec. information

Customer : MACK  
Motor : EE9 502  
Power KW : 368.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 011  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 23.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 2- 7- 8- 4- 5  
: - 6- 3

Phasing : 0-45-90-135-180-225  
: -270-315  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 630

Rack travel in mm : 11.95  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 208.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.90  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.45  
Tolerance mm : ± 0.15

Rated speed rpm : 450  
guide sleeve  
travel mm : 2.50  
Tolerance mm : ± 0.20

Rated speed rpm : 800  
guide sleeve  
travel mm : 4.60  
Tolerance mm : ± 0.20

Rated speed rpm : 1050  
guide sleeve  
travel mm : 7.00  
Tolerance mm : ± 0.10

Rated speed rpm : 1200  
guide sleeve  
travel mm : 9.05  
Tolerance mm : ± 0.15

GUIDE SLEEVE POSITION

control lever  
position degree : -1  
Rated speed rpm : 1220

Rack travel in mm : 10.00  
Tolerance mm : ± 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 630  
Aneroid pressure  
hPa : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 208.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 61.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 10.0  
Rated speed rpm : 1220

rack travel mm : 12.10  
Rated speed rpm : 1100.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1195.0  
Tolerance 1/min : ± 15.0

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1300

LOW IDLE

control lever  
position degree : 13.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 4.9

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325  
rack travel mm : 4.90  
Tolerance mm : ± 0.10

---

TORQUE CONTROL

Rated speed rpm : 630  
rack travel mm : 11.95  
Tolerance mm : ± 0.05

Rated speed rpm : 1050  
rack travel mm : 13.20  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 5.65  
Tolerance mm : ± 5.65

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1050  
Pressure hPa : 1200  
rack travel mm : 13.20  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1050  
rack travel mm : 9.30  
Tolerance mm : ± 0.20

Pressure hPa : 195  
rack travel mm : 10.25  
Tolerance mm : ± 0.05

Pressure hPa : 410  
rack travel mm : 12.30  
Tolerance mm : ± 0.20

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---

Start interlock

Rated speed rpm : 280

check  
speed 1/min : 290

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure

hPa : 1200  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 205.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 172.50  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 9.70  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 25.00

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 4.90  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 43.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.02.90  
Test oil : ISO-4113  
Combination No. : 0 402 748 803  
Injection pump  
Pump designation : PES8P120A920/4LS7184  
EP type number : 0 412 728 802  
Governor  
Governor design. : RQV325...950PA848  
: -22K  
Governor no. : 0 421 815 202  
Cust. part No. : 313GC5180P2

Customer-spec. information

Customer : MACK  
Motor : E9 450  
Power KW : 331.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 011  
Overflow quantity  
min. l/h : 165.0  
Tolerance l/h : ± 5.0  
Test nozzle holder  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 008  
Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 23.0  
Tolerance bar : ± 1.0  
Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 12.00  
Tolerance mm : ± 1.00  
Firing order : 1- 2- 7- 8- 4- 5  
: - 6- 3  
Phasing : 0-45-90-135-180-225  
: -270-315  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Start of delivery mark  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950  
Rack travel in mm : 13.95  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 211.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00



Check tolerance  
cm<sup>3</sup>/1000S. : + 4.00

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 5.50  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 41.00

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : + 5.00

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.55

Tolerance mm : + 0.15

Rated speed rpm : 450  
guide sleeve  
travel mm : 2.95

Tolerance mm : + 0.15

Rated speed rpm : 800  
guide sleeve  
travel mm : 5.80

Tolerance mm : + 0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 7.95

Tolerance mm : + 0.15

Rated speed rpm : 1200  
guide sleeve  
travel mm : 9.75

Tolerance mm : + 0.15

GUIDE SLEEVE POSITION

control lever  
position degree : -1  
Rated speed rpm : 1145

Rack travel in mm : 10.00  
Tolerance mm : + 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950  
Aneroid pressure  
hPa : 900

Del. quantity  
cm<sup>3</sup>/1000 strokes : 211.00

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.00

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 60.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 10.0  
Rated speed rpm : 1145

rack travel mm : 12.90  
Rated speed rpm : 995.0  
Tolerance 1/min : + 5.0

rack travel mm : 4.00  
Rated speed rpm : 1140.0  
Tolerance 1/min : + 15.0

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1250

LOW IDLE

control lever  
position degree : 16.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 5.5

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325  
rack travel mm : 5.50  
Tolerance mm : ± 0.10

---

TORQUE CONTROL

Rated speed rpm : 950  
rack travel mm : 13.95  
Tolerance mm : ± 0.05

Rated speed rpm : 650  
rack travel mm : 13.30  
Tolerance mm : ± 0.10

Rated speed rpm : 750  
rack travel mm : 13.80  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 6.20  
Tolerance mm : ± 6.20

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 950  
Pressure hPa : 900  
rack travel mm : 13.95  
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 950  
rack travel mm : 8.90  
Tolerance mm : ± 0.20

Pressure hPa : 230  
rack travel mm : 10.25  
Tolerance mm : ± 0.05

Pressure hPa : 535  
rack travel mm : 12.80  
Tolerance mm : ± 0.20

---

Start interlock

Rated speed rpm : 270

Check  
speed 1/min : 280

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 900  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 219.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.00  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.

---

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 146.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.20  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 20.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 30.00

---

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 5.50  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 41.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  5.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.02.90  
Test oil : ISO-4113  
Combination No. : 0 402 748 803  
Injection pump  
Pump designation : PES8P120A920/4LS7184  
EP type number : 0 412 728 802  
Governor  
Governor design. : RQV325...950PA848  
: -22K  
Governor no. : 0 421 815 202  
Cust. part No. : 313GC5180P4

Customer-spec. information

Customer : MACK  
Motor : E9 450  
Power KW : 331.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Overflow quantity  
min. L/h : 165.0  
Tolerance L/h : ± 5.0

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 23.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 12.00  
Tolerance mm : ± 1.00

Firing order : 1- 2- 7- 8- 4- 5  
: - 6- 3

Phasing : 0-45-90-135-180-225  
: -270-315  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.95  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 211.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 5.50  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 41.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325  
guide sleeve  
travel mm : 1.55  
Tolerance mm : ± 0.15

Rated speed rpm : 450  
guide sleeve  
travel mm : 2.95  
Tolerance mm : ± 0.15

Rated speed rpm : 800  
guide sleeve  
travel mm : 5.80  
Tolerance mm : ± 0.10

Rated speed rpm : 1050  
guide sleeve  
travel mm : 7.95  
Tolerance mm : ± 0.15

Rated speed rpm : 1200  
guide sleeve  
travel mm : 9.75  
Tolerance mm : ± 0.15

H01

GUIDE SLEEVE POSITION

control lever  
position degree : -1  
Rated speed rpm : 1145

Rack travel in mm : 10.00  
Tolerance mm : ± 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950  
Aneroid pressure  
hPa : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 211.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 60.0  
tolerance degree : ± 4.0

RATED SPEED  
rack travel mm : 10.0  
Rated speed rpm : 1145

rack travel mm : 12.90  
Rated speed rpm : 995.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1140.0  
Tolerance 1/min : ± 15.0

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1250

LOW IDLE

control lever  
position degree : 16.0  
tolerance degree :  $\pm$  4.0

Setting point w/out bumper spring

Rated speed rpm : 325  
rack travel mm : 5.5

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325  
rack travel mm : 5.50  
Tolerance mm :  $\pm$  0.10

TORQUE CONTROL

Rated speed rpm : 950  
rack travel mm : 13.95  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 650  
rack travel mm : 13.30  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 750  
rack travel mm : 13.80  
Tolerance mm :  $\pm$  0.10

Rated speed rpm : 500  
rack travel mm : 6.20  
Tolerance mm :  $\pm$  6.20

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 950  
Pressure hPa : 900  
rack travel mm : 13.95  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Rated speed rpm : 950  
rack travel mm : 8.90  
Tolerance mm :  $\pm$  0.20

Pressure hPa : 230  
rack travel mm : 10.25  
Tolerance mm :  $\pm$  0.05

H02

Pressure hPa : 535  
rack travel mm : 12.80  
Tolerance mm :  $\pm$  0.20

Start interlock

Rated speed rpm : 270

Check  
speed 1/min : 280

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 900  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 219.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.00  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.

Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 146.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 11.20  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  20.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  30.00

LOW IDLE

Rated speed rpm : 325.0  
Rack travel in mm : 5.50  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 41.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 05.03.90  
Test oil : ISO-4113  
  
Combination No. : 0 402 776 803  
  
Injection pump  
Pump designation : PES6P120A720LS7107  
                  : -1  
EP type number : 0 412 726 805  
  
Governor  
Governor design. : RSV350..750POA520-1  
Governor no. : 0 421 833 262

Cust. part No. :

---

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM447 A  
Power KW : 180.0

---

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 025  
  
Inlet press. bar : 1.50  
  
Overflow quantity  
min. l/h : 110.0  
Tolerance l/h : ± 10.0  
  
Test nozzle holde  
assembly : 1 688 901 019  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 067

H04

Outside diameter : 6.00  
x inside diameter : 3.00  
x length mm : 1000

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 5.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 6- 2- 4- 1- 5  
                  : - 3  
  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery mark  
  
Barrel no. : 6

---

BASIC SETTING

Rated speed rpm : 700  
  
Rack travel in mm : 14.85  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 225.00  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00



Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 350.0

Rack travel in mm : 5.65  
Tolerance mm : +- 0.15

Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : -3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : +- 0.35

governor spring  
pre-tension  
click setting x : 2.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 225.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.00

H05

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 81.0  
tolerance degree : +- 4.0

RATED SPEED  
rack travel mm : 0.6  
Rated speed rpm : 800

rack travel mm : 0.85  
Tolerance mm : +- 0.85  
Rated speed rpm : 1000

LOW IDLE

control lever  
position degree : 67.0  
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 5.6

Rated speed rpm : 100

CRT mm min. : 19.50

Testing:

Rated speed rpm : 350  
rack travel mm : 5.65  
Tolerance mm : +- 0.15

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 14.85  
Tolerance mm : +- 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 750

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 320  
rack travel mm : -1.70  
Tolerance mm :  $\pm 0.10$   
rack travel mm : -2.40  
Tolerance mm :  $\pm 0.10$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 240.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 10.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 14.00$

---

LOW IDLE

Rated speed rpm : 350.0  
Rack travel in mm : 5.65  
Tolerance mm :  $\pm 0.15$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.03.90  
Test oil : ISO-4113  
  
Combination No. : 0 402 776 806  
  
Injection pump  
Pump designation : PES6P120A720LS7120  
EP type number : 0 412 726 803

Governor  
Governor design. : RSV350..1050POA529  
                  : -3  
Governor no. : 0 421 833 317

Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM447 A  
Power KW : 213.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Overflow quantity  
min. l/h : 110.0  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 067

H07

Outside diameter : 6.00  
x inside diameter : 3.00  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 6- 2- 4- 1- 5  
                  : - 3

Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 650

Rack travel in mm : 14.10  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 203.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 350.0

Rack travel in mm : 5.70  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.00

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : -3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 650  
Aneroid pressure  
hPa : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 203.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 52.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 0.5  
Rated speed rpm : 800

rack travel mm : 12.30  
Rated speed rpm : 1085.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1185.0  
Tolerance 1/min : ± 15.0

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1300

LOW IDLE

control lever  
position degree : 26.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 5.7

Testing:

Rated speed rpm : 350  
rack travel mm : 5.70  
Tolerance mm : ± 0.10

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 650  
rack travel mm : 14.10  
Tolerance mm : ± 0.10

Rated speed rpm : 950  
rack travel mm : 13.80  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 875  
rack travel mm : 14.30  
Tolerance mm :  $\pm 0.10$

Rated speed rpm : 750  
rack travel mm : 14.80  
Tolerance mm :  $\pm 0.10$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 600

MEASUREMENT

Rated speed rpm : 600

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 1030  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 195.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.50$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.50$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 221.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.50$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.50$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.00

H09

---

Aneroid pressure  
hPa : )

---

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 145.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.00

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 10.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 14.00$

---

LOW IDLE

Rated speed rpm : 350.0  
Rack travel in mm : 5.70  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 17.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 6.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 02.10.89  
Test oil : ISO-4113

Combination No. : 0 402 846 857A

Injection pump  
Pump designation : PE6P130A72ORS7150  
EP type number : 0 412 636 808

Governor  
Governor design. : RQV250...900PA881  
Governor no. : 0 421 813 676

Cust. part No. :

## Customer-spec. information

Customer : VOLVO-CAR  
Motor : TAMD 162 A (PD)  
Power KW : 450.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 067

Outside diameter : 6.00

x inside diameter : 3.00  
x length mm : 1000

H10

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.65  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2  
: - 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.65  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 384.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.00

Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 250.0

Rack travel in mm : 3.80  
 Tolerance mm : ± 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 19.50  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.50

Check tolerance  
 cm<sup>3</sup>/1000S. : ± 5.00

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 7.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250  
 guide sleeve  
 travel mm : 1.10  
 Tolerance mm : ± 0.20

Rated speed rpm : 350  
 guide sleeve  
 travel mm : 2.30  
 Tolerance mm : ± 0.30

Rated speed rpm : 700  
 guide sleeve  
 travel mm : 4.20  
 Tolerance mm : ± 0.30

Rated speed rpm : 1075  
 guide sleeve  
 travel mm : 8.20  
 Tolerance mm : ± 0.10

Rated speed rpm : 1160  
 guide sleeve  
 travel mm : 9.50  
 Tolerance mm : ± 0.20

---

GUIDE SLEEVE POSITION

control lever  
 position degree : -1  
 Rated speed rpm : 1100

Rack travel in mm : 16.50  
 Tolerance mm : ± 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : 1200

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 384.00  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
 cm<sup>3</sup>/1000S. : ± 5.00

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
 position degree : 119.0  
 tolerance degree : ± 4.0

RATED SPEED  
 rack travel mm : 16.5  
 Rated speed rpm : 1100

rack travel mm : 11.60  
 Rated speed rpm : 1075.0  
 Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
 Rated speed rpm : 1160.0  
 Tolerance 1/min : ± 15.0

rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1300

---

LOW IDLE

control lever  
 position degree : 67.0  
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250  
rack travel mm : 3.8

Rated speed rpm : 100

CRT mm min. : 5.30

Testing:

Rated speed rpm : 250  
rack travel mm : 3.80  
Tolerance mm :  $\pm 0.10$

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 12.65  
Tolerance mm :  $\pm 0.05$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1200  
rack travel mm : 12.65  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 340  
rack travel mm : 0.25  
Tolerance mm :  $\pm 0.05$   
  
Pressure hPa : 970  
rack travel mm : 3.65  
Tolerance mm :  $\pm 0.05$

---

FUEL DELIVERY CHARACTERISTICS

---

Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 217.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$

---

LOW IDLE

Rated speed rpm : 250.0

Rack travel in mm : 3.80  
Tolerance mm :  $\pm 0.10$

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.50

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.50$

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 5.00$

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

---

End of test specification sheet



# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.12.89  
Test oil : ISO-4113

Combination No. : 0 403 456 101

Injection pump  
Pump designation : PES6MW100/321RS1153  
EP type number : 0 413 406 145

Governor  
Governor design. : RQ250/1300MW84  
Governor no. : 0 420 082 029

Cust. part No. : 2-7724

---

Customer-spec. information  
Customer : MAN  
Motor : D 0826 LF  
Power KW : 165.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

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## REMARKS

---

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2  
                  : - 4

Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

---

## BASIC SETTING

Rated speed rpm : 1000

---

Rack travel in mm : 11.55  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.00

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.00

---

Spread

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

---

Rated speed rpm : 250.0

Rack travel in mm : 5.00  
 Tolerance mm : ± 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 20.00  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.00  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.50  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1440  
 guide sleeve  
 travel mm : 8.90  
 Tolerance mm : ± 0.20

Rated speed rpm : 1360  
 guide sleeve  
 travel mm : 6.40  
 Tolerance mm : ± 0.10

Rated speed rpm : 380  
 guide sleeve  
 travel mm : 4.40  
 Tolerance mm : ± 0.30

Rated speed rpm : 250  
 guide sleeve  
 travel mm : 1.70  
 Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever  
 position degree : -2  
 Rated speed rpm : 600

Rack travel in mm : 20.00  
 Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
 Aneroid pressure  
 hPa : 1000  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 134.00  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.00  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 3.00  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

CONTROL LEVER

control lever  
 position degree : 30.0  
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 20.0  
 Rated speed rpm : 600

rack travel mm : 10.50  
 Rated speed rpm : 1352.5  
 Tolerance 1/min : ± 7.5

rack travel mm : 4.00  
 Rated speed rpm : 1450.0  
 Tolerance 1/min : ± 10.0

rack travel mm : 4.00

rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1530

LOW IDLE

control lever  
 position degree : 10.0  
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250  
rack travel mm : 5.0

Rated speed rpm : 100

CRT mm min. : 7.00

Testing:

Rated speed rpm : 250  
rack travel mm : 5.00  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 11.55  
Tolerance mm :  $\pm 0.05$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
rack travel mm : 9.15  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 180  
rack travel mm : 9.45  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 385  
rack travel mm : 10.85  
Tolerance mm :  $\pm 0.15$

Pressure hPa : 1000  
rack travel mm : 11.55  
Tolerance mm :  $\pm 0.05$

---

Start interlock

Rated speed rpm : 180

Check  
speed 1/min : 200

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000

Rated speed rpm : 600

Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.50

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.50$

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.00

Check tolerance  
cm<sup>3</sup>/1000S. : 7.

---

Aneroid pressure  
hPa : 1000

Rated speed rpm : 800

Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.50

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.50$

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

Rated speed rpm : 1300

Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.00

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.50$

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 75.00

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.00$

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 3.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.00

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 5.00$

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 8.00$

---

LOW IDLE

Rated speed rpm : 250.0  
Rack travel in mm : 5.00  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.50$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.12.89  
Test oil : ISO-4113

Combination No. : 0 403 456 102

Injection pump  
Pump designation : PES6MW100/321RS1153  
EP type number : 0 413 406 145

Governor  
Governor design. : RQV250...1300MW83  
Governor no. : 0 420 083 139

Cust. part No. :

## Customer-spec. information

Customer : MAN  
Motor : D 0826 LF  
Power KW : 165.0

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

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## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2  
                  : - 4

Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Start of delivery mark

Barrel no. : 1

## BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.55  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.00

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

Rated speed rpm : 250.0

Rack travel in mm : 5.20  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.50

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1450  
guide sleeve  
travel mm : 9.60  
Tolerance mm : ± 0.20

Rated speed rpm : 1350  
guide sleeve  
travel mm : 8.50  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
guide sleeve  
travel mm : 3.00  
Tolerance mm : ± 0.30

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.00  
Tolerance mm : ± 0.20

---

GUIDE SLEEVE POSITION

control lever  
position degree : -1  
Rated speed rpm : 1320

Rack travel in mm : 16.50  
Tolerance mm : ± 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.00

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

CONTROL LEVER

control lever  
position degree : 52.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 16.5  
Rated speed rpm : 1320

rack travel mm : 10.50  
Rated speed rpm : 1352.5  
Tolerance 1/min : ± 7.5

rack travel mm : 4.00  
Rated speed rpm : 1450.0  
Tolerance 1/min : ± 10.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1600

---

LOW IDLE

control lever  
position degree : 14.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250  
rack travel mm : 5.2  
  
Rated speed rpm : 100  
  
CRT mm min. : 7.00  
  
Testing:  
  
Rated speed rpm : 250  
rack travel mm : 5.20  
Tolerance mm :  $\pm 0.10$   
  
rack travel mm : 2.00

---

TORQUE CONTROL  
Rated speed rpm : 1000  
rack travel mm : 11.55  
Tolerance mm :  $\pm 0.05$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
rack travel mm : 9.15  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Rated speed rpm : 500  
  
Pressure hPa : 180  
rack travel mm : 9.45  
Tolerance mm :  $\pm 0.05$   
  
Pressure hPa : 385  
rack travel mm : 10.85  
Tolerance mm :  $\pm 0.15$   
  
Pressure hPa : 1000  
rack travel mm : 11.55  
Tolerance mm :  $\pm 0.05$

---

Start interlock

Rated speed rpm : 170  
  
Check  
speed 1/min : 200

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.50$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$   
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.

---

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.50$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

Rated speed rpm : 1300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.50$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 75.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 3.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 5.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 8.00$

---

LOW IDLE

Rated speed rpm : 250.0  
Rack travel in mm : 5.20  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.50  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.12.89  
Test oil : ISO-4113  
  
Combination No. : 0 403 456 102  
  
Injection pump  
Pump designation : PES6MW100/321RS1153  
EP type number : 0 413 406 145  
  
Governor  
Governor design. : RQV250...1300MW83  
Governor no. : 0 420 083 139  
  
Cust. part No. : 2-7725

Customer-spec. information  
Customer : MAN  
Motor : D 0826 LF  
Power KW : 165.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 047  
  
Inlet press. bar : 1.50  
  
Test nozzle holder  
assembly : 0 681 343 009  
  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 008  
  
Outside diameter : 6.00  
x inside diameter : 2.00  
x length mm : 600

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REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 3.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2  
                  : - 4  
  
Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery mark  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000  
  
Rack travel in mm : 11.55  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.00  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 3.00  
  
Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

---

Rated speed rpm : 250.0

Rack travel in mm : 5.20  
 Tolerance mm : ± 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 20.00  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.00  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.50  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1450  
 guide sleeve  
 travel mm : 9.60  
 Tolerance mm : ± 0.20

Rated speed rpm : 1350  
 guide sleeve  
 travel mm : 8.50  
 Tolerance mm : ± 0.10

Rated speed rpm : 500  
 guide sleeve  
 travel mm : 3.00  
 Tolerance mm : ± 0.30

Rated speed rpm : 250  
 guide sleeve  
 travel mm : 1.00  
 Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever  
 position degree : -1  
 Rated speed rpm : 1320

Rack travel in mm : 16.50  
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
 Aneroid pressure  
 hPa : 1000  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 134.00  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.00  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 3.00  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

CONTROL LEVER

control lever  
 position degree : 52.0  
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 16.5  
 Rated speed rpm : 1320

rack travel mm : 10.50  
 Rated speed rpm : 1352.5  
 Tolerance 1/min : ± 7.5

rack travel mm : 4.00  
 Rated speed rpm : 1450.0  
 Tolerance 1/min : ± 10.0

rack travel mm : 4.00

rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1600

LOW IDLE

control lever  
 position degree : 14.0  
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250  
rack travel mm : 5.2

Rated speed rpm : 100

CRT mm min. : 7.00

#### Testing:

Rated speed rpm : 250  
rack travel mm : 5.20  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00

---

#### TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 11.55  
Tolerance mm :  $\pm 0.05$

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
rack travel mm : 9.15  
Tolerance mm :  $\pm 0.05$

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 180  
rack travel mm : 9.45  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 385  
rack travel mm : 10.85  
Tolerance mm :  $\pm 0.15$

Pressure hPa : 1000  
rack travel mm : 11.55  
Tolerance mm :  $\pm 0.05$

---

#### Start interlock

Rated speed rpm : 170

Check  
speed 1/min : 200

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.50$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.

---

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.50$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

Rated speed rpm : 1300  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 134.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.50$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 75.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 3.00$

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 5.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 8.00$

---

#### LOW IDLE

Rated speed rpm : 250.0  
Rack travel in mm : 5.20  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.50  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.12.89  
Test oil : ISO-4113

Combination No. : 0 403 456 103

Injection pump  
Pump designation : PES6MW100/321RS1153  
EP type number : 0 413 406 145

Governor  
Governor design. : RQV250...1100MW83-1  
Governor no. : 0 420 083 182

Cust. part No. : 2-7947

---

Customer-spec. information  
Customer : MAN  
Motor : D 0826 L/217  
Power KW : 150.0

---

## TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holde  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

H25

## REMARKS

---

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

## BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2  
                  : - 4

Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Start of delivery mark

Barrel no. : 1

---

## BASIC SETTING

Rated speed rpm : 800

---

Rack travel in mm : 11.45  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.00

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.00

---

Speed

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

---

Rated speed rpm : 250.0

Rack travel in mm : 4.90  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 21.00  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 2.00  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.50  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 5.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1210  
 guide sleeve  
 travel mm : 11.30  
 Tolerance mm : + 0.20

Rated speed rpm : 1150  
 guide sleeve  
 travel mm : 10.30  
 Tolerance mm : + 0.10

Rated speed rpm : 550  
 guide sleeve  
 travel mm : 3.50  
 Tolerance mm : + 0.30

Rated speed rpm : 250  
 guide sleeve  
 travel mm : 1.30  
 Tolerance mm : + 0.20

GUIDE SLEEVE POSITION

control lever  
 position degree : -1  
 Rated speed rpm : 1130

Rack travel in mm : 16.50  
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 800  
 Aneroid pressure  
 hPa : 1000  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 133.00  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.00  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 3.00  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 6.0

CONTROL LEVER

control lever  
 position degree : 58.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 16.5  
 Rated speed rpm : 1130

rack travel mm : 10.40  
 Rated speed rpm : 1145.0  
 Tolerance 1/min : + 5.0

rack travel mm : 4.00  
 Rated speed rpm : 1210.0  
 Tolerance 1/min : + 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1300

LOW IDLE

control lever  
 position degree : 17.0  
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 250  
rack travel mm : 4.9

Rated speed rpm : 100

CRT mm min. : 7.00

#### Testing:

Rated speed rpm : 250  
rack travel mm : 4.90  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00

---

#### TORQUE CONTROL

Rated speed rpm : 800  
rack travel mm : 11.45  
Tolerance mm :  $\pm 0.05$

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
rack travel mm : 8.85  
Tolerance mm :  $\pm 0.05$

#### MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 220  
rack travel mm : 9.15  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 480  
rack travel mm : 10.85  
Tolerance mm :  $\pm 0.15$

Pressure hPa : 1000  
rack travel mm : 11.45  
Tolerance mm :  $\pm 0.05$

---

#### Start interlock

Rated speed rpm : 180

Check  
speed 1/min : 200

---

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.50$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.

---

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 1100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 133.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.50$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 75.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 3.00$

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 5.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 8.00$

---

#### LOW IDLE

Rated speed rpm : 250.0

Rack travel in mm : 4.90  
Tolerance mm :  $\pm 0.10$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.50  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.12.89  
Test oil : ISO-4113

Combination No. : 0 403 456 104

Injection pump  
Pump designation : PES6MW100/321RS1180  
EP type number : 0 413 406 163

Governor  
Governor design. : RQ250/120CMW84-1  
Governor no. : 0 420 082 037

Cust. part No. : 2-7986

Customer-spec. information  
Customer : MAN  
Motor : D 0826 LUH  
Power KW : 157.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

J01

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.55  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2  
                  : - 4

Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.65  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 127.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000s. : ± 3.00

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

Rated speed rpm : 250.0

Rack travel in mm : 5.30  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.50  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1320  
guide sleeve  
travel mm : 8.80  
Tolerance mm : ± 0.20

Rated speed rpm : 1260  
guide sleeve  
travel mm : 6.60  
Tolerance mm : ± 0.10

Rated speed rpm : 350  
guide sleeve  
travel mm : 3.70  
Tolerance mm : ± 0.30

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.80  
Tolerance mm : ± 0.30

---

GUIDE SLEEVE POSITION

control lever  
position degree : -2  
Rated speed rpm : 600

Rack travel in mm : 20.00  
Tolerance mm : ± 0.80

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 127.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.00  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

CONTROL LEVER

control lever  
position degree : 30.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 20.0  
Rated speed rpm : 600

rack travel mm : 10.60  
Rated speed rpm : 1252.5  
Tolerance 1/min : ± 7.5

rack travel mm : 4.00  
Rated speed rpm : 1320.0  
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1450

---

LOW IDLE

control lever  
position degree : 10.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250  
rack travel mm : 5.3

Rated speed rpm : 100

CRT mm min. : 7.30

Testing:

Rated speed rpm : 250  
rack travel mm : 5.30  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00

---

TORQUE CONTROL

Rated speed rpm : 1000  
rack travel mm : 11.65  
Tolerance mm :  $\pm 0.05$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
rack travel mm : 9.35  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 200  
rack travel mm : 9.65  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 400  
rack travel mm : 11.05  
Tolerance mm :  $\pm 0.15$

Pressure hPa : 1000  
rack travel mm : 11.65  
Tolerance mm :  $\pm 0.05$

---

Start interlock

Rated speed rpm : 180

Check  
speed 1/min : 200

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1000

Rated speed rpm : 600

Del. quantity  
cm<sup>3</sup>/1000 strokes : 124.50

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.50$

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.00

Check tolerance  
cm<sup>3</sup>/1000S. : 7.

---

Aneroid pressure

hPa : 1000

Rated speed rpm : 800

Del. quantity  
cm<sup>3</sup>/1000 strokes : 127.00

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.50$

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

Rated speed rpm : 1200

Del. quantity  
cm<sup>3</sup>/1000 strokes : 127.00

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.50$

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

Rated speed rpm : 500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 75.00

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.00$

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 3.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.00

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 5.00$

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 8.00$

---

LOW IDLE

Rated speed rpm : 250.0  
Rack travel in mm : 5.30  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.50  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.12.89  
Test oil : ISO-4113

Combination No. : 0 403 456 105

Injection pump  
Pump designation : PES6MW100/321RS1186  
EP type number : 0 413 406 168

Governor  
Governor design. : RQ250/1200MW04-2  
Governor no. : 0 420 082 040

Cust. part No. : 3-7008

Customer-spec. information  
Customer : MAN  
Motor : D 0826 LUH  
Power KW : 157.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

J05

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.65  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 7.50  
Tolerance mm : ± 7.50

Firing order : 1- 5- 3- 6- 2  
                  : - 4

Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 14.75  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 127.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.00

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

Rated speed rpm : 250.0

Rack travel in mm : 5.50  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.50

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1280  
guide sleeve  
travel mm : 9.70  
Tolerance mm : ± 0.20

Rated speed rpm : 1250  
guide sleeve  
travel mm : 7.60  
Tolerance mm : ± 0.10

Rated speed rpm : 350  
guide sleeve  
travel mm : 5.50  
Tolerance mm : ± 0.30

Rated speed rpm : 250  
guide sleeve  
travel mm : 2.50  
Tolerance mm : ± 0.20

---

GUIDE SLEEVE POSITION

control lever  
position degree : -2  
Rated speed rpm : 600

Rack travel in mm : 15.50  
Tolerance mm : ± 0.80

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
Aneroid pressure  
hPa : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 127.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.00  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

CONTROL LEVER

control lever  
position degree : 42.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 15.5  
Rated speed rpm : 600

rack travel mm : 13.80  
Rated speed rpm : 1252.5  
Tolerance 1/min : ± 7.5

rack travel mm : 4.00  
Rated speed rpm : 1300.0  
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1450

---

LOW IDLE

control lever  
position degree : 12.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250  
rack travel mm : 5.5

Rated speed rpm : 100

CRT mm min. : 7.50

Testing:

Rated speed rpm : 250  
rack travel mm : 5.50  
Tolerance mm :  $\pm 0.10$

rack travel mm : 2.00

---

TORQUE CONTROL

Dimension a mm : 0.30  
Rated speed rpm : 1000  
rack travel mm : 14.75  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 600  
rack travel mm : 14.85  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 800  
rack travel mm : 14.85  
Tolerance mm :  $\pm 0.05$

Rated speed rpm : 1200  
rack travel mm : 14.35  
Tolerance mm :  $\pm 0.05$

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
rack travel mm : 12.25  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 200  
rack travel mm : 12.75  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 400  
rack travel mm : 13.95  
Tolerance mm :  $\pm 0.15$

Pressure hPa : 1000  
rack travel mm : 14.85

Tolerance mm :  $\pm 0.05$

---

Start interlock

Rated speed rpm : 180

Check  
speed 1/min : 200

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 128.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.50$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$   
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.

---

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 128.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.50$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

Rated speed rpm : 1200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 124.50  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.50$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.00$

---

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 75.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 3.00$

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.00

---

LOW IDLE

Rated speed rpm : 250.0  
  
Rack travel in mm : 5.50  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.50  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.11.89  
Test oil : ISO-4113

Combination No. : 0 403 466 121

Injection pump  
Pump designation : PES6MW100/120RS1184  
EP type number : 0 413 406 171

Governor  
Governor design. : RSV375...125UMW2A334  
Governor no. : 0 420 085 122

Cust. part No. : 3280646

Customer-spec. information  
Customer : CUMMINS  
Motor : 6 BTAA 5.9  
Power KW : 157.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holder  
assembly : 1 688 901 017

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00  
x length mm : 600

J09

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.55  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2  
                  : - 4

Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.85  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 126.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.00

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

Rated speed rpm : 375.0

Rack travel in mm : 6.75  
Tolerance mm : ± 0.25

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.50

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : -3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : ± 0.35

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 126.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.00  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

CONTROL LEVER

control lever  
position degree : 56.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 0.6  
Rated speed rpm : 800

rack travel mm : 9.80  
Rated speed rpm : 1300.0  
Tolerance 1/min : ± 5.0

rack travel mm : 4.00  
Rated speed rpm : 1385.0  
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 1470

---

LOW IDLE

control lever  
position degree : 32.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 375  
rack travel mm : 5.7

Rated speed rpm : 100

CRT mm min. : 19.00

Testing:

Rated speed rpm : 375  
rack travel mm : 6.75  
Tolerance mm : ± 0.25

---

TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 10.85  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
rack travel mm : 9.35  
Tolerance mm :  $\pm 0.05$

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 490  
rack travel mm : 10.25  
Tolerance mm :  $\pm 0.05$

Pressure hPa : 550  
rack travel mm : 10.55  
Tolerance mm :  $\pm 0.15$

Pressure hPa : 800  
rack travel mm : 10.85  
Tolerance mm :  $\pm 0.05$

---

FUEL DELIVERY CHARACTERISTICS

---

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 81.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 1.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 3.00$   
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.00  
Check tolerance  
cm<sup>3</sup>/1000S. : 7.00

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm :  $\pm 1.00$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 5.00$   
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 8.00$

---

LOW IDLE

Rated speed rpm : 375.0

Rack travel in mm : 6.75  
Tolerance mm :  $\pm 0.25$

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.00

Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 2.00$

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm 4.50$

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 01.02.90  
Test oil : ISO-4113

Combination No. : 0 403 474 005

Injection pump  
Pump designation : PES4MW100/720RS1127  
EP type number : 0 413 404 103

Governor  
Governor design. : RSV350...750MWDA318  
: -4  
Governor no. : 0 420 085 089

Cust. part No. :

Customer-spec. information  
Customer : DB  
Motor : OM364A  
Power KW : 63.0

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40.0  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holder  
assembly : 0 681 343 009

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.00

x inside diameter : 3.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.75  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.85  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 96.00

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00

Check tolerance  
cm<sup>3</sup>/1000s. : ± 3.00

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

---

Rated speed rpm : 350.0

Rack travel in mm : 7.60  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.00

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

#### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

#### GUIDE SLEEVE POSITION

control lever  
position degree : -3  
Rated speed rpm : 800

Rack travel in mm : 0.65  
Tolerance mm : ± 0.35

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 96.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.00  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 6.0

#### RATED SPEED

rack travel mm : 0.6  
Rated speed rpm : 800

rack travel mm : 4.00

rack travel mm : 4.00

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 800

---

#### LOW IDLE

control lever  
position degree : 65.0  
tolerance degree : ± 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 7.6

#### Testing:

Rated speed rpm : 350  
rack travel mm : 7.60  
Tolerance mm : ± 0.10

rack travel mm : 2.00

#### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

---

#### TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 13.85  
Tolerance mm : ± 0.05

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 95.00  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.00  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.00

---

#### LOW IDLE

Rated speed rpm : 350.0

Rack travel in mm : 7.60  
Tolerance mm :  $\pm$  0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.00  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.00  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.00  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 11.07.97  
Test oil : ISO 4113  
Combination No. : F 000 409 204  
Injection pump  
Pump designation : PES6A95D410RS2812  
EP type number : 9 400 084 028  
Governor  
Governor design. : RQV350...1300AB1327L  
Governor no. : F 000 420 303

Cust. part No. :

Customer-spec. information  
Customer : MWM  
Motor : 6.10 TCA EURO I  
Power kW : 152.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2  
Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holder assembly : 0 681 343 009  
Opening pressure bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300  
Rack travel in mm : 13.15  
Tolerance mm : ± 0.05  
Del. quantity cm<sup>3</sup>/1000 strokes : 111.0  
Tolerance cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance cm<sup>3</sup>/1000S. : ± 3.0  
Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

---

Rated speed rpm : 350

Rack travel in mm : 6.40  
 Tolerance mm : +- 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 16.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 4.5

Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 800  
 guide sleeve  
 travel mm : 3.95  
 Tolerance mm : +- 0.25

Rated speed rpm : 1350  
 guide sleeve  
 travel mm : 7.20  
 Tolerance mm : +- 0.10

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.05  
 Tolerance mm : +- 0.25

Rated speed rpm : 550  
 guide sleeve  
 travel mm : 2.75  
 Tolerance mm : +- 0.25

Rated speed rpm : 1500  
 guide sleeve  
 travel mm : 8.55  
 Tolerance mm : +- 0.25

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1480

Rack travel in mm : 16.50  
 Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300  
 Aneroid pressure  
 hPa : 900  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 111.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 3.0

Speed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

CONTROL LEVER

control lever  
 position degree : 113.0  
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.10  
 Rated speed rpm : 1360  
 Tolerance 1/min : +- 5

rack travel mm : 4.00  
 Rated speed rpm : 1545  
 Tolerance 1/min : +- 15

rack travel mm : 0.50  
 Tolerance mm : +- 0.50  
 Rated speed rpm : 1730

LOW IDLE

control lever  
 position degree : 68.0  
 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 100



CRT mm min. : > 8.50

Testing:

Rated speed rpm : 350  
rack travel mm : 6.40  
Tolerance mm : ± 0.10

Rated speed rpm : 390

---

TORQUE CONTROL

Rated speed rpm : 1300  
rack travel mm : 13.15  
Tolerance mm : ± 0.05

Rated speed rpm : 800  
rack travel mm : 13.15  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 13.15  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 350  
rack travel mm : 2.50  
Tolerance mm : ± 0.10

Pressure hPa : 200  
rack travel mm : 1.10  
Tolerance mm : ± 0.05

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 200

Check speed 1/min : > 80  
Check speed 1/min : < 220

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 900  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 109.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : ± 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 146.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 8.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 11.0

---

LOW IDLE

Rated speed rpm : 350  
Rack travel in mm : 6.40  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 16.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 29.11.96  
Test oil : ISO 4113

Combination No. : 0 400 846 258

Injection pump  
Pump designation : PES6A90D410RS2293Z  
EP type number : 0 410 896 037

Governor  
Governor design. : RQV300...1425AB740L  
Governor no. : 0 420 212 037

Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ

TEST BENCH REQUIREMENTS

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Inlet press. bar : 1.5

Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

BASIC SETTING

Del. quantity  
cm<sup>3</sup>/1000 strokes : 74.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

Rated speed rpm : 300

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1375  
Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 74.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

RATED SPEED

rack travel mm : 4.00

rack travel mm : 4.00

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 100

Testing:

rack travel mm : 2.00

---

Start interlock

Rated speed rpm : > 100

Check  
speed 1/min : > 80

---

STARTING FUEL DELIVERY

Rated speed rpm : 100

---

LOW IDLE

Rated speed rpm : 300

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) 4400/...

Edition : 10.07.97  
Test oil : ISO 4113  
  
Combination No. : 0 400 846 597  
  
Injection pump  
Pump designation : PES6A90D410RS2813  
EP type number : 0 410 896 089  
  
Governor  
Governor design. : RQV300...1250AB1264L  
Governor no. : 0 420 212 233

Cust. part No. :

Customer-spec. information  
Customer : IVECO-FIAT  
Motor : 8065.25.000  
Power kW : 145.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 419 992 198  
  
Inlet press. bar : 1.5  
  
Test nozzle holder  
assembly : 0 681 343 009  
  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 014  
  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250  
  
Rack travel in mm : 11.30  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 77.0  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

Rated speed rpm : 325

Rack travel in mm : 8.30  
Tolerance mm : +- 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5

Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 897  
guide sleeve  
travel mm : 5.25  
Tolerance mm : +- 0.25

Rated speed rpm : 300  
guide sleeve  
travel mm : 0.85  
Tolerance mm : +- 0.25

Rated speed rpm : 445  
guide sleeve  
travel mm : 2.45  
Tolerance mm : +- 0.25

Rated speed rpm : 540  
guide sleeve  
travel mm : 3.05  
Tolerance mm : +- 0.25

Rated speed rpm : 1324  
guide sleeve  
travel mm : 8.25  
Tolerance mm : +- 0.25

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1455

Rack travel in mm : 10.90  
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
Aneroid pressure  
hPa : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 77.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : +- 2.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.0

CONTROL LEVER

control lever  
position degree : 105.0  
tolerance degree : +- 4.0

RATED SPEED  
rack travel mm : 10.30  
Rated speed rpm : 1320  
Tolerance 1/min : +- 5

rack travel mm : 4.00  
Rated speed rpm : 1435  
Tolerance 1/min : +- 15

rack travel mm : 0.50  
Tolerance mm : +- 0.50  
Rated speed rpm : 1550

LOW IDLE

control lever  
position degree : 79.0  
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 225  
CRT mm min. : > 10.00

Testing:

Rated speed rpm : 325  
rack travel mm : 8.30  
Tolerance mm : ± 0.10

Rated speed rpm : 425

---

TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 11.30  
Tolerance mm : ± 0.05

Rated speed rpm : 400  
rack travel mm : 12.85  
Tolerance mm : ± 0.05

Rated speed rpm : 700  
rack travel mm : 12.30  
Tolerance mm : ± 0.10

Rated speed rpm : 900  
rack travel mm : 11.60  
Tolerance mm : ± 0.15

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 400  
Pressure hPa : 700  
rack travel mm : 12.50  
Tolerance mm : ± 0.05

Rated speed rpm : 400  
Pressure hPa : -  
rack travel mm : 10.80  
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 400  
Pressure hPa : 350  
rack travel mm : 12.10  
Tolerance mm : ± 0.10

Pressure hPa : 320  
rack travel mm : 11.65  
Tolerance mm : ± 0.05

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 250

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 700  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 80.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 3.5

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 51.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 2.5

---

STARTING FUEL DELIVERY

ESS test: With 12 V solenoid activated,  
rack must reach start position in max.  
control lever setting.

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : ± 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 7.5  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 10.0

---

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 8.30  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 13.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.5  
Check tolerance  
cm<sup>3</sup>/1000s. : 7.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.07.97  
Test oil : ISO 4113  
  
Combination No. : 0 400 864 108  
  
Injection pump  
Pump designation : PES4A95D410/3RS2789  
EP type number : 0 410 894 995  
  
Governor  
Governor design. : RS325...1250AOC916L  
Governor no. : 0 420 220 014  
  
Cust. part No. : 0423 2128 KY

Customer-spec. information  
Customer : KHD-DMI  
Motor : F4L913  
Power kW : 59.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 419 992 198  
  
Inlet press. bar : 1.5  
  
Test nozzle holder  
assembly : 0 681 343 009  
  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
  
Test Lines : 1 680 750 014  
  
Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 3.00  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 3- 4- 2  
  
Phasing : 0-90-180-270  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250  
  
Rack travel in mm : 11.35  
Tolerance mm : ± 0.05  
  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.0  
  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0  
  
Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

---

Rated speed rpm : 325

Rack travel in mm : 8.80  
 Tolerance mm : ± 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 11.5  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.5

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.5  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
 position degree : FREE  
 Rated speed rpm : 800

Rack travel in mm : 0.50  
 Tolerance mm : ± 0.20

governor spring  
 pre-tension  
 click setting x : 3.00

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250  
 Aneroid pressure  
 hPa : -

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 76.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : ± 3.0

Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

---

CONTROL LEVER

control lever  
 position degree : 87.0  
 tolerance degree : ± 4.0

RATED SPEED  
 rack travel mm : 10.35  
 Rated speed rpm : 1295  
 Tolerance 1/min : ± 5

rack travel mm : 4.00  
 Rated speed rpm : 1355  
 Tolerance 1/min : ± 15

rack travel mm : 0.85  
 Tolerance mm : ± 0.55  
 Rated speed rpm : 1505

---

LOW IDLE

Testing:

Rated speed rpm : 325  
 rack travel mm : 8.80  
 Tolerance mm : ± 0.10

---

TORQUE CONTROL

Rated speed rpm : 1250  
 rack travel mm : 11.35  
 Tolerance mm : ± 0.05

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
 rack travel mm : 20.25  
 Tolerance mm : ± 0.75

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 120.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 7.5

Check tolerance  
 cm<sup>3</sup>/1000S. : ± 10.0

---

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 8.80  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  2.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.5

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.07.97  
Test oil : ISO 4113  
Combination No. : 0 400 866 197  
Injection pump  
Pump designation : PES6A100D320/3RS2691  
: -4  
EP type number : 9 410 230 030  
Governor  
Governor design. : RSV450...1100AOC2238  
: -3R  
Governor no. : 0 420 233 330  
Cust. part No. :

Customer-spec. information

Customer : CDC  
Motor : 6 CT 830  
Power KW : 151.0

TEST BENCH REQUIREMENTS

Inlet line : 2.  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holde  
assembly : 1 688 901 101  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 28.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75  
Start of delivery mark  
\*NW after s.o.d. : 11.00  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.15  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.5

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.5

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

---

Rated speed rpm : 450

Rack travel in mm : 5.70  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.5

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 900

Del. quantity  
cm<sup>3</sup>/1000 strokes : 120.5

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 3.5

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 6.5

CONTROL LEVER

control lever  
position degree : 96.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 4.00  
Rated speed rpm : 1210  
Tolerance 1/min : + 15

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1143  
rack travel mm : 11.15

Rated speed rpm : 1200  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1360

Rated speed rpm : 1144  
rack travel mm : 11.15

Rated speed rpm : 1201  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55

Rated speed rpm : 1145  
rack travel mm : 11.15

Rated speed rpm : 1202  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55

Rated speed rpm : 1146  
rack travel mm : 11.15

Rated speed rpm : 1203  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55

Rated speed rpm : 1147  
rack travel mm : 11.15

Rated speed rpm : 1204  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55

Rated speed rpm : 1148  
rack travel mm : 11.15

Rated speed rpm : 1205  
Tolerance 1/min : + 5  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55

---

#### LOW IDLE

control lever  
position degree : 74.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 450  
rack travel mm : 5.20  
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

K02

Rated speed rpm : 450  
rack travel mm : 5.70  
Tolerance mm : + 0.10

rack travel mm : 2.00  
Rated speed rpm : 515  
Tolerance 1/min : + 30

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.15  
Tolerance mm : + 0.05

Rated speed rpm : 750  
rack travel mm : 13.10  
Tolerance mm : + 0.10

Rated speed rpm : 1100  
rack travel mm : 11.15  
Tolerance mm : + 0.05

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500  
Pressure hPa : 900  
rack travel mm : 13.10  
Tolerance mm : + 0.10

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 10.45  
Tolerance mm : + 0.10

#### MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 560  
rack travel mm : 12.35  
Tolerance mm : + 0.20

Pressure hPa : 385  
rack travel mm : 11.45  
Tolerance mm : + 0.05

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 900  
Rated speed rpm : 750

Del. quantity  
cm<sup>3</sup>/1000 strokes : 137.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 82.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.00  
Tolerance mm : ± 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 146.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 13.0

---

#### LOW IDLE

Rated speed rpm : 450  
Rack travel in mm : 5.70  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 3G.04.97  
Test oil : ISO 4113  
  
Combination No. : 0 400 866 219  
  
Injection pump  
Pump designation : PES6A95D12ORS2860  
EP type number : 0 410 896 889  
  
Governor  
Governor design. : RSV410...1050AOC2260  
: -3R  
Governor no. : 0 420 233 344  
  
Cust. part No. : 32 82 684

Customer-spec. information  
Customer : CUMMINS  
Motor : 6 BT  
Power KW : 113.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 419 992 198  
  
Inlet press. bar : 1.5  
  
Test nozzle holde  
assembly : 1 688 901 101  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
  
Test lines : 1 680 750 014  
  
Outside diameter : 6.0

K04

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 2.15  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery blocking  
  
°NW after s.o.d. : 11.50  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050  
  
Rack travel in mm : 10.90  
Tolerance mm : ± 0.05



Del. quantity  
cm<sup>3</sup>/1000 strokes : 97.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

---

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

Rated speed rpm : 430

Rack travel in mm : 7.20  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 1.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

K05

Aneroid pressure  
hPa : 1100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 97.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

CONTROL LEVER

control lever  
position degree : 90.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.90  
Rated speed rpm : 1095  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1140  
Tolerance 1/min : ± 15

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1330

rack travel mm : 4.00  
Rated speed rpm : 1175  
Tolerance 1/min : ± 15

LOW IDLE

control lever  
position degree : 70.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 430  
rack travel mm : 6.70  
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 430  
rack travel mm : 7.20  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 590  
Tolerance 1/min : ± 30

---

TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 10.90  
Tolerance mm : ± 0.05

Rated speed rpm : 450  
rack travel mm : 11.80  
Tolerance mm : ± 0.10

Rated speed rpm : 550  
rack travel mm : 11.50  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 450  
Pressure hPa : 1100  
rack travel mm : 11.80  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.80  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 450  
Pressure hPa : 420  
rack travel mm : 10.10  
Tolerance mm : ± 0.10

Pressure hPa : 730  
rack travel mm : 10.95  
Tolerance mm : ± 0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1100  
Rated speed rpm : 450

Del. quantity  
cm<sup>3</sup>/1000 strokes : 98.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

Aneroid pressure

hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 67.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 14.00  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 7.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 10.0

---

LOW IDLE

Rated speed rpm : 430  
Rack travel in mm : 7.20  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.07.97  
 Test oil : ISO 4113  
 Combination No. : 0 400 876 188  
 Injection pump  
 Pump designation : PES6A80D410RS2085X  
 EP type number : 0 410 886 045  
 Governor  
 Governor design. : RSV350...1400A2C1052  
 : L  
 Governor no. : 0 420 232 406  
 Cust. part No. :

Customer-spec. information  
 Customer : MB-NFZ  
 Motor : GM352  
 Power kW : 80.9

TEST BENCH REQUIREMENTS

Inlet line : 1.2  
 Test oil inlet  
 temp. °C : 40  
 Tolerance °C : ± 2.0  
 Overflow valve : 1 419 992 198  
 Inlet press. bar : 1.5  
 Test nozzle holder  
 assembly : 0 681 343 009  
 Opening pressure  
 bar : 173.5  
 Tolerance bar : ± 1.5  
 Test lines : 1 680 750 014  
 Outside diameter : 6.0

K07

x inside diameter : 2.0  
 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
 Set equal delivery quant.  
 per values \_\_\_\_\_

BEGINNING OF DELIVERY

Firing order : 1- 5- 3- 6- 2-  
 : 4

Phasing : 0-60-120-180-240  
 : -300

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 9.05  
 Tolerance mm : ± 0.05

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 52.5

Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
 cm<sup>3</sup>/1000S. : ± 2.0

Spread

Tolerance  
 cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
 cm<sup>3</sup>/1000S. : 4.0

Rated speed rpm : 350

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 11.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : ± 2.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 5.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400  
Aneroid pressure  
hPa : -  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 52.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.0

CONTROL LEVER

control lever  
position degree : 112.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1680

rack travel mm : 4.00  
Rated speed rpm : 1530

K08

Tolerance 1/min : ± 15

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 6.70  
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

rack travel mm : 2.00  
Rated speed rpm : 530  
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1400  
rack travel mm : 9.05  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
rack travel mm : 9.95  
Tolerance mm : ± 0.05

Rated speed rpm : 850  
rack travel mm : 9.60  
Tolerance mm : ± 0.10

Rated speed rpm : 950  
rack travel mm : 9.25  
Tolerance mm : ± 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 48.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Aneroid pressure  
hPa : -

Rated speed rpm : 850  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.5

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 14.40  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 83.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

---

#### LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 3.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.07.97  
Test oil : ISO 4113  
Combination No. : 0 400 876 293  
Injection pump  
Pump designation : PES6A90D410RS2596  
EP type number : 0 410 896 073  
Governor  
Governor design. : RSV350...1400A0C1141  
: L  
Governor no. : 0 420 232 423  
Cust. part No. :

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM352A  
Power KW : 123.0

TEST BENCH REQUIREMENTS

Inlet line : 1.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 419 992 198  
Inlet press. bar : 1.5  
Test nozzle holder  
assembly : 0 681 343 009  
Opening pressure  
bar : 173.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 014  
Outside diameter : 6.0

K10

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 2.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400  
Rack travel in mm : 11.95  
Tolerance mm : ± 0.05  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 74.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5  
Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

Rated speed rpm : 350

Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400

Aneroid pressure  
hPa : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 74.5

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 2.5

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

CONTROL LEVER

control lever  
position degree : 114.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 0.85  
Tolerance mm : ± 0.55  
Rated speed rpm : 1680

rack travel mm : 4.00  
Rated speed rpm : 1535  
Tolerance 1/min : ± 15

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 8.10  
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 16.00

Testing:

rack travel mm : 2.00  
Rated speed rpm : 500  
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1400  
rack travel mm : 11.95  
Tolerance mm : ± 0.05

Rated speed rpm : 900  
rack travel mm : 13.05  
Tolerance mm : ± 0.05

Rated speed rpm : 1050  
rack travel mm : 12.80  
Tolerance mm : ± 0.10

Rated speed rpm : 1260  
rack travel mm : 11.95  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 13.15  
Tolerance mm :  $\pm$  0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 11.35  
Tolerance mm :  $\pm$  0.05

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 340  
rack travel mm : 11.70  
Tolerance mm :  $\pm$  0.10

Pressure hPa : 500  
rack travel mm : 12.65  
Tolerance mm :  $\pm$  0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 700  
Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 76.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  4.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.5  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  0.5  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  2.5

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 16.30  
Tolerance mm :  $\pm$  0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 83.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  5.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  8.0

---

LOW IDLE

Rated speed rpm : 350  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 11.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  1.0  
Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 4.5

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.07.97  
Test oil : ISO 4113

Combination No. : F 002 A0Z 050

Injection pump  
Pump designation : PES6A95D320/3RS2916  
EP type number : F 002 A10 010

Governor  
Governor design. : RSV425...1050AQC930R  
Governor no. : F 002 A20 236

Cust. part No. : 328 3917

Customer-spec. information  
Customer : CUMMINS  
Motor : 6BT  
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery blocking

\*NW after s.o.d. : 7.00  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.25  
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm <sup>3</sup> /1000 strokes :	98.2
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S. :	+ 3.0
<hr/>	
Spreed	
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes :	4.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S. :	6.0
<hr/>	

Rated speed rpm : 425

Rack travel in mm :	5.05
Tolerance mm :	+ 0.10
Del. quantity	
cm <sup>3</sup> /1000 strokes :	18.5
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 2.0
Check tolerance	
cm <sup>3</sup> /1000S. :	+ 4.5
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes :	6.0
Check tolerance	
cm <sup>3</sup> /1000S. :	8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever	
position degree :	FREE
Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.50
Tolerance mm :	+ 0.20
<hr/>	
governor spring	
pre-tension	
click setting x :	2.75

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure	
hPa :	900
Del. quantity	
cm <sup>3</sup> /1000 strokes :	98.2
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 1.0
Check tolerance	
cm <sup>3</sup> /1000S. :	+ 3.0
Spreed	
Tolerance	
cm <sup>3</sup> /1000 strokes :	4.0
Check tolerance	
cm <sup>3</sup> /1000S. :	6.0

---

CONTROL LEVER

control lever	
position degree :	100.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	10.25
Rated speed rpm :	1115
Tolerance 1/min :	+ 5

rack travel mm :	4.50
Rated speed rpm :	1170
Tolerance 1/min :	+ 5

rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1275

rack travel mm :	4.50
Rated speed rpm :	1170
Tolerance 1/min :	+ 15

---

LOW IDLE

control lever	
position degree :	80.0
tolerance degree :	+ 4.0

Control lever difference	
Grad :	20.0
tolerance degree :	+ 6.0

Setting point w/out bumper spring

Rated speed rpm :	425
rack travel mm :	4.55
Tolerance mm :	+ 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 425  
rack travel mm : 5.05  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 500  
Tolerance 1/min : ± 30

---

TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 11.25  
Tolerance mm : ± 0.05

Rated speed rpm : 800  
rack travel mm : 11.80  
Tolerance mm : ± 0.20

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 650  
Pressure hPa : 900

Rated speed rpm : 650  
Pressure hPa : -  
rack travel mm : 10.00  
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 650  
Pressure hPa : 650  
rack travel mm : 11.65  
Tolerance mm : ± 0.20

Pressure hPa : 400  
rack travel mm : 10.70  
Tolerance mm : ± 0.20

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 900  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 106.2

K15

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 82.9  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 121.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 15.0

---

LOW IDLE

Rated speed rpm : 425  
Rack travel in mm : 5.05  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.5  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 06.01.97  
Test oil : ISO 4113  
Combination No. : 0 403 466 174  
Injection pump  
Pump designation : PES6MW100/120RS1238  
EP type number : 0 413 406 237

Governor  
Governor design. : RSV500...1100MWA398  
Governor no. : 0 420 085 287

Cust. part No. : 3930122

Customer-spec. information  
Customer : CDC  
Motor : 6 CT  
Power KW : 112.5

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.80  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Start of delivery blocking

\*NW after s.o.d. : 7.50  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack  
travel : 15.00  
Difference ° CS : 2.00

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 9.95  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 112.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

Rated speed rpm : 500

Rack travel in mm : 5.60  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5

Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 3.50

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 112.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 7.5

---

CONTROL LEVER

control lever  
position degree : 102.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 8.90  
Rated speed rpm : 1165  
Tolerance 1/min : ± 5

rack travel mm : 6.00  
Rated speed rpm : 1230  
Tolerance 1/min : ± 5

rack travel mm : 1.00  
Tolerance mm : ± 0.70  
Rated speed rpm : 1400

rack travel mm : 6.00  
Rated speed rpm : 1230  
Tolerance 1/min : ± 15

---

LOW IDLE

control lever  
position degree : 88.0  
tolerance degree : ± 4.0

Control lever difference  
Grad : 14.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 500  
rack travel mm : 5.10  
Tolerance mm : ± 0.10

Rated speed rpm : 100  
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 500  
rack travel mm : 5.60  
Tolerance mm : ± 0.10

---

TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 9.95  
Tolerance mm : ± 0.05

Rated speed rpm : 750  
rack travel mm : 10.60  
Tolerance mm : ± 0.10

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -  
Rated speed rpm : 750  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 122.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : ± 1.00  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 177.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 13.0

---

LOW IDLE

Rated speed rpm : 500  
Rack travel in mm : 5.60  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 25.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 3.5  
Check tolerance  
cm<sup>3</sup>/1000S. : 5.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.07.97  
Test oil : ISO 4113

Combination No. : 9 400 030 732

Injection pump  
Pump designation : PES6A95D320/3RS2881  
EP type number : 9 410 037 215

Governor  
Governor design. : RSV475...1250A0C845R  
Governor no. : 9 420 034 711

Cust. part No. : 3929407

---

Customer-spec. information  
Customer : CDC  
Motor : 6BT  
Power kW : 97.0

---

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

K19

x inside diameter : 2.0  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 17.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Start of delivery blocking

\*NW after s.o.d. : 7.00  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Barrel no. : 1

---

BASIC SETTING

Rated speed rpm : 1250

---

Rack travel in mm : 10.80  
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm <sup>3</sup> /1000 strokes :	88.5
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S. :	+ 3.0
<hr/>	
Spread	
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S. :	6.0
<hr/>	

Rated speed rpm :	475
<hr/>	
Rack travel in mm :	5.10
Tolerance mm :	+ 0.10
Del. quantity	
cm <sup>3</sup> /1000 strokes :	18.5
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 2.0
Check tolerance	
cm <sup>3</sup> /1000S. :	+ 4.5
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes :	3.5
Check tolerance	
cm <sup>3</sup> /1000S. :	5.5

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree :	- 3
Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.50
Tolerance mm :	+ 0.20
<hr/>	
governor spring	
pre-tension	
click setting x :	5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1250
-------------------	------

K20

Aneroid pressure	
hPa :	-
Del. quantity	
cm <sup>3</sup> /1000 strokes :	88.5
Tolerance	
cm <sup>3</sup> /1000 strokes :	+ 1.0
Check tolerance	
cm <sup>3</sup> /1000S. :	+ 3.0
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes :	3.5
Check tolerance	
cm <sup>3</sup> /1000S. :	6.0

CONTROL LEVER

control lever	
position degree :	117.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	9.80
Rated speed rpm :	1310
Tolerance 1/min :	+ 5

rack travel mm :	5.50
Rated speed rpm :	1370
Tolerance 1/min :	+ 5

rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1500

rack travel mm :	5.50
Rated speed rpm :	1370
Tolerance 1/min :	+ 15

LOW IDLE

control lever	
position degree :	91.0
tolerance degree :	+ 4.0

Control lever difference

Grad :	26.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	475
rack travel mm :	4.60
Tolerance mm :	+ 0.10

Rated speed rpm :	100
-------------------	-----



CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475  
rack travel mm : 5.10  
Tolerance mm : +- 0.10

---

TORQUE CONTROL

Rated speed rpm : 1250  
rack travel mm : 10.80  
Tolerance mm : +- 0.05

Rated speed rpm : 800  
rack travel mm : 11.20  
Tolerance mm : +- 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 800  
Pressure hPa : -

MEASUREMENT

Pressure hPa : 800  
rack travel mm : 10.80  
Tolerance mm : +- 0.30

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure

hPa : -  
Rated speed rpm : 800  
Del. quantity  
cm3/1000 strokes : 94.5  
Tolerance  
cm3/1000 strokes : +- 2.0  
Check tolerance  
cm3/1000S. : +- 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : +- 0.50  
Del. quantity  
cm3/1000 strokes : 120.5

Tolerance  
cm3/1000 strokes : +- 10.0  
Check tolerance  
cm3/1000S. : +- 15.0

---

LOW IDLE

Rated speed rpm : 475  
Rack travel in mm : 5.10  
Tolerance mm : +- 0.10  
Del. quantity  
cm3/1000 strokes : 18.5  
Tolerance  
cm3/1000 strokes : +- 2.0  
Check tolerance  
cm3/1000S. : +- 4.5  
Speed  
Tolerance  
cm3/1000 strokes : 3.5  
Check tolerance  
cm3/1000S. : 5.5

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.07.97  
Test oil : ISO 4113

Combination No. : 0 401 846 843

Injection pump  
Pump designation : PE6P120A72ORS3069  
EP type number : 0 411 826 712

Governor  
Governor design. : RQV300...1G00PA501  
: -4  
Governor no. : 0 421 813 609

Cust. part No. :

Customer-spec. information  
Customer : IVECO-FIAT  
Motor : 8210.22.371

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.55  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Del. quantity  
cm3/1000 strokes : 206.0

Tolerance  
cm3/1000 strokes : ± 1.0

Check tolerance  
cm3/1000S. : ± 4.0

Speed  
Tolerance  
cm3/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 9.0

Rated speed rpm : 300  
 Rack travel in mm :  
 Tolerance mm : +  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 20.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : +- 6.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1000  
 guide sleeve  
 travel mm : 8.10  
 Tolerance mm : +- 0.15

Rated speed rpm : 325  
 guide sleeve  
 travel mm : 1.70  
 Tolerance mm : +- 0.20

Rated speed rpm : 450  
 guide sleeve  
 travel mm : 3.10  
 Tolerance mm : +- 0.20

Rated speed rpm : 800  
 guide sleeve  
 travel mm : 5.90  
 Tolerance mm : +- 0.20

Rated speed rpm : 1300  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : +- 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000  
 Aneroid pressure  
 hPa : 700  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 206.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : +- 4.0  
 Spreed  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 120.0  
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.50  
 Rated speed rpm : 1045  
 Tolerance 1/min : +- 5  
 Check  
 speed 1/min : +- 10

rack travel mm : 4.00  
 Rated speed rpm : 1145  
 Tolerance 1/min : +- 15  
 Check  
 speed 1/min : +- 20

rack travel mm : 0.50  
 Tolerance mm : +- 0.50  
 Rated speed rpm : 1250

LOW IDLE

control lever  
 position degree : 67.0  
 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 100  
 CRT mm min. : > 7.70

Testing:

Rated speed rpm : 300  
 rack travel mm : 6.20  
 Tolerance mm : +- 0.20

rack travel mm : 2.00

Rated speed rpm : 370

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 700  
rack travel mm : 12.55  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.80  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 230  
rack travel mm : 10.85  
Tolerance mm : ± 0.15

Pressure hPa : 280  
rack travel mm : 11.85  
Tolerance mm : ± 0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 700  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 218.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 132.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 200.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 6.20  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 20.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 08.07.97  
Test oil : ISO 4113  
Combination No. : 0 402 076 802B  
Injection pump  
Pump designation : PES6P120A1320/5RS337  
: 3  
EP type number : 0 412 026 794  
Governor  
Governor design. : RSV350...1050P8A643  
Governor no. : 0 421 833 555  
Cust. part No. : 1385930 - Version B

Customer-spec. information  
Customer : SCANIA  
Motor : DSI1171A,-C1156A

TEST BENCH REQUIREMENTS

Inlet line : 4.2  
Vibration  
damper  
(RoBo diaphragm) : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 2.5  
Tolerance bar : + 0.1  
Test nozzle holde  
assembly : 1 688 901 104  
Opening pressure  
bar : 251.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 008  
Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
Prestroke mm : 4.45  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 1- 5- 3- 6- 2-  
: 4  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75  
Start of delivery mark  
Tolerance : + 0.30  
Check  
tolerance °NW : + 0.75  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.25  
Tolerance mm : +- 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 225.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 7.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.10  
Tolerance mm : +- 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : +- 0.20

governor spring  
pre-tension  
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure

hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 225.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 7.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

CONTROL LEVER

control lever  
position degree : 49.0  
tolerance degree : +- 4.0

control lever  
position degree : 99.0  
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 14.20  
Rated speed rpm : 945

Tolerance 1/min : +- 5  
Check

speed 1/min : +- 10

rack travel mm : 4.00  
Rated speed rpm : 1045

Tolerance 1/min : +- 15  
Check

speed 1/min : +- 20

rack travel mm : 0.85  
Tolerance mm : +- 0.55

Rated speed rpm : 1200

rack travel mm : 4.00  
Rated speed rpm : 1065

Tolerance 1/min : +- 15  
Check

speed 1/min : +- 20

LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : ± 4.0

control lever  
position degree : 23.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 4.60  
Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 350  
rack travel mm : 5.10  
Tolerance mm : ± 0.10

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 15.25  
Tolerance mm : ± 0.05

Rated speed rpm : 900  
rack travel mm : 15.25  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 15.25  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 13.10  
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 450  
rack travel mm : 13.60  
Tolerance mm : ± 0.20

Pressure hPa : 660  
rack travel mm : 14.65  
Tolerance mm : ± 0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 216.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 183.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 5.0

---

LOW IDLE

Rated speed rpm : 350  
Rack travel in mm : 5.10  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 08.07.97  
Test oil : ISO 4113

Combination No. : 0 402 076 802c

Injection pump  
Pump designation : PES6P120A1320/5RS337  
: 3  
EP type number : 0 412 026 794

Governer  
Governer design. : RSV350...1050P8A643  
Governer no. : 0 421 833 555

Cust. part No. : 1385930 - Version C

Customer-spec. information

Customer : SCANIA  
Motor : DSI1171A,-C1156A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper  
(RoBo diaphragm) : 3.1

Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holde assembly : 1 688 901 104

Opening pressure bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.30  
Check tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700



Rack travel in mm : 15.35  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 7.0

---

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 350

Rack travel in mm : 5.10  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : + 0.20

governor spring  
pre-tension  
click setting x : 5.75

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 226.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 7.0

Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### CONTROL LEVER

control lever  
position degree : 54.0  
tolerance degree : + 4.0

control lever  
position degree : 104.0  
tolerance degree : + 4.0

#### RATED SPEED

rack travel mm : 14.30  
Rated speed rpm : 1095

Tolerance 1/min : + 5  
Check

speed 1/min : + 10

rack travel mm : 4.00  
Rated speed rpm : 1195

Tolerance 1/min : + 15  
Check

speed 1/min : + 20

rack travel mm : 0.85  
Tolerance mm : + 0.55

Rated speed rpm : 1350

rack travel mm : 4.00  
Rated speed rpm : 1225

Tolerance 1/min : + 15  
Check

speed 1/min : + 20

---

#### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : ± 4.0

control lever  
position degree : 23.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 4.60  
Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 350  
rack travel mm : 5.10  
Tolerance mm : ± 0.10

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 15.35  
Tolerance mm : ± 0.05

Rated speed rpm : 1050  
rack travel mm : 15.35  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 15.35  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa :  
rack travel mm : 13.10  
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 450  
rack travel mm : 13.60  
Tolerance mm : ± 0.20

Pressure hPa : 660  
rack travel mm : 14.65  
Tolerance mm : ± 0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 209.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 183.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

---

LOW IDLE

Rated speed rpm : 350  
Rack travel in mm : 5.10  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 08.07.97  
Test oil : ISO 4113

Combination No. : 0 402 076 8020

Injection pump  
Pump designation : PES6P120A1320/5RS337  
: 3  
EP type number : 0 412 026 794

Governor  
Governor design. : RSV350...1050P8A643  
Governor no. : 0 421 833 555

Cust. part No. : 1385930 - Version D

Customer-spec. information

Customer : SCANIA  
Motor : DSI1171A,-C1156A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper  
(RoBo diaphragm) : 3.1

Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder assembly : 1 688 901 104

Opening pressure bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.30  
Check tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.15  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 221.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 7.0

---

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 350

Rack travel in mm : 5.10  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : ± 0.20

governor spring  
pre-tension  
click setting x : 6.00

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 221.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 7.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

CONTROL LEVER

control lever  
position degree : 54.0  
tolerance degree : ± 4.0

control lever  
position degree : 104.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.10  
Rated speed rpm : 1095

Tolerance 1/min : ± 5  
Check  
speed 1/min : ± 10

rack travel mm : 4.00  
Rated speed rpm : 1185

Tolerance 1/min : ± 15  
Check  
speed 1/min : ± 20

rack travel mm : 0.85  
Tolerance mm : ± 0.55

Rated speed rpm : 1350

rack travel mm : 4.00  
Rated speed rpm : 1205

Tolerance 1/min : ± 15  
Check  
speed 1/min : ± 20

---

LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : ± 4.0

control lever  
position degree : 23.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350  
rack travel mm : 4.60  
Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 350  
rack travel mm : 5.10  
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 15.15  
Tolerance mm : ± 0.05

Rated speed rpm : 1050  
rack travel mm : 14.15  
Tolerance mm : ± 0.05

Rated speed rpm : 925  
rack travel mm : 14.60  
Tolerance mm : ± 0.10

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 15.15  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 12.10  
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 510  
rack travel mm : 13.10  
Tolerance mm : ± 0.20

Pressure hPa : 780  
rack travel mm : 14.50  
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 189.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

LOW IDLE

Rated speed rpm : 350  
Rack travel in mm : 5.10  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 26.10.95  
Test oil : ISO 4113

Combination No. : 0 402 610 802

Injection pump  
Pump designation : PE12P120A500LS7866  
EP type number : 0 412 620 836

Governor  
Governor design. :  
Governor no. :

Cust. part No. : 0240742902

Customer-spec. information  
Customer : MTU  
Motor : 12V183-02

TEST BENCH REQUIREMENTS

Inlet line : 3.1,3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 075

L06

Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 12- 1- 5- 9- 8  
: - 3- 4- 11- 10  
: - 2- 6- 7

Phasing : 0-45-60-105-120  
: -165-180-225-240  
: -285-300-345  
Tolerance : ± 0.50  
Check  
tolerance \*NW : ± 0.75

Start of delivery mark

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 10.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 184.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.1

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0

Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 184.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

TORQUE CONTROL

Rated speed rpm : 750

rack travel mm : 10.45

Tolerance mm : ± 0.05

---

LOW IDLE

Del. quantity  
cm<sup>3</sup>/1000 strokes : 18.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.1

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0

Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.07.97  
Test oil : ISO 4113

Combination No. : 0 402 618 806

Injection pump  
Pump designation : PE8P120A500/5RS7377  
EP type number : 0 412 628 904

Governor  
Governor design. :  
Governor no. :

Cust. part No. : 1 2277 429

Customer-spec. information  
Customer : MWM  
Motor : TBD 616-V16  
Power KW : 864.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holde  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 13.00  
Tolerance mm : ± 0.50

Firing order : 1- 2- 7- 8- 3- 4-  
: 5- 6

Phasing : 0-30-45-75-90-120  
: -315-345  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 12.35  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 285.0



Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750

Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 285.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

TORQUE CONTROL

Rated speed rpm : 750

rack travel mm : 12.35

Tolerance mm : ± 0.05

---

LOW IDLE

Rated speed rpm : 325

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.07.97  
Test oil : ISO 4113

Combination No. : 0 402 618 807

Injection pump  
Pump designation : PE8P120A500/5RS7378  
EP type number : 0 412 628 905

Governor  
Governor design. :  
Governor no. :

Cust. part No. : 1 2277 428

---

Customer-spec. information  
Customer : MWM  
Motor : TBD 616-V16  
Power KW : 864.0

---

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 13.00  
Tolerance mm : ± 0.50

Firing order : 1- 2- 5- 6- 3- 4  
                  : - 7- 8

Phasing : 0-30-45-75-270-300  
          : -315-345  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Barrel no. : 1

---

BASIC SETTING

Rated speed rpm : 750

---

Rack travel in mm : 12.35  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 285.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 325

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750

Aneroid pressure  
hPa : -

Del. quantity  
cm<sup>3</sup>/1000 strokes : 285.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

TORQUE CONTROL

Rated speed rpm : 750

rack travel mm : 12.35

Tolerance mm : ± 0.05

---

LOW IDLE

Rated speed rpm : 325

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.04.97  
Test oil : ISO 4113

Combination No. : 0 402 640 830

Injection pump  
Pump designation : PE12P120A520LS7824  
: -2  
EP type number : 0 412 620 828

Governor  
Governor design. : RQV300...1150PA902  
: -4  
Governor no. : 0 421 813 870

Cust. part No. : 3-7153

Customer-spec. information  
Customer : MAN  
Motor : D2842LYE  
Power KW : 735.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity  
min. l/h : 120  
Tolerance l/h : ± 20.0

Test nozzle holde  
assembly : 1 688 901 019

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.55  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 12-1A- 5- 9A- 8  
: - 3A- 4-11A- 10  
: - 2A- 6

Phasing : 0-45-60-105-120  
: -165-180-225-240  
: -285-300-345  
Tolerance : ± 0.30

Check  
tolerance \*NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance \*NW : ± 0.75

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.75  
Tolerance mm : + 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 305.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

---

Speed

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 300

Rack travel in mm : 7.30  
Tolerance mm : + 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 56.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 4.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1150  
guide sleeve  
travel mm : 9.60  
Tolerance mm : + 0.10

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.40  
Tolerance mm : + 0.20

Rated speed rpm : 750  
guide sleeve  
travel mm : 5.80  
Tolerance mm : + 0.20

Rated speed rpm : 450  
guide sleeve  
travel mm : 3.20  
Tolerance mm : + 0.30

Rated speed rpm : 1400

guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1260

Rack travel in mm : 12.70  
Tolerance mm : + 1.30

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : 1300

Del. quantity  
cm<sup>3</sup>/1000 strokes : 305.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

CONTROL LEVER

control lever  
position degree : 122.0  
tolerance degree : + 4.0

RATED SPEED  
rack travel mm : 12.70  
Rated speed rpm : 1195  
Tolerance 1/min : + 5

rack travel mm : 4.00  
Rated speed rpm : 1305  
Tolerance 1/min : + 15

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1400

---

LOW IDLE

control lever  
position degree : 85.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100  
CRT mm min. : > 8.90

Testing:

Rated speed rpm : 300  
rack travel mm : 7.30  
Tolerance mm : ± 0.10

rack travel mm : 2.00  
Rated speed rpm : 480  
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 13.75  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
rack travel mm : 6.90  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 8.50  
Tolerance mm : ± 0.10

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1300  
rack travel mm : 13.75  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.20  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 470  
rack travel mm : 12.10  
Tolerance mm : ± 0.20

Pressure hPa : 100  
rack travel mm : 9.45  
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Delivery for shutoff assemblies  
(refer to cam sequence).  
Arbitrary delivery for standard plunger  
barrel assemblies.

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 0.1

Delivery for shutoff assemblies  
(refer to cam sequence).  
Arbitrary delivery for standard plunger  
barrel assemblies.

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 150.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 19.30  
Tolerance mm : ± 1.70  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 110.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0

---

LOW IDLE

Delivery for standard plunger/barrel  
assemblies.  
Zero delivery for shutoff assemblies  
(refer to cam sequence).

Rated speed rpm : 300  
Rack travel in mm : 7.30  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 56.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.07.97  
Test oil : ISO 4113

Combination No. : 0 402 648 603A

Injection pump  
Pump designation : PE8P120A720LS7427T  
EP type number : 0 412 628 919

Governor  
Governor design. : RQ750PA1227-1  
Governor no. : 0 421 801 812

Cust. part No. : 1391886 - Version A

Customer-spec. information  
Customer : SCANIA  
Motor : DSI(C)14...A,M

TEST BENCH REQUIREMENTS

Inlet Line : 4.1

Vibration damper  
(RoBo diaphragm) : 3.2

Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder assembly : 1 688 901 104

Opening pressure bar : 251.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.45  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 1.50

Firing order : 1-2A- 7- 3A- 4  
: - 5A- 6

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.30  
Check tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10  
Check tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 15.05  
Tolerance mm : ± 0.05



---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 271.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rack travel in mm : 6.50  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 38.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 759  
guide sleeve

travel mm : 4.89  
Tolerance mm : ± 0.15

Rated speed rpm : 480  
Tolerance mm : ± 0.25

Rated speed rpm : 840  
Tolerance mm : ± 0.25

Rated speed rpm : 797  
guide sleeve

travel mm : 10.00  
Tolerance mm : ± 0.25

Rated speed rpm : 850

guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure

hPa : 1500  
Del. quantity

cm<sup>3</sup>/1000 strokes : 271.0  
Tolerance

cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance

cm<sup>3</sup>/1000S. : ± 8.0  
Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

CONTROL LEVER

control lever  
position degree : 30.0  
tolerance degree : ± 4.0

control lever  
position degree : 92.0

tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 900  
rack travel mm : 15.50

Rated speed rpm : 940  
Tolerance 1/min : ± 4

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50

Rated speed rpm : 1000

Rated speed rpm : 901  
rack travel mm : 15.50

Rated speed rpm : 941  
Tolerance 1/min : ± 4

rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50

Rated speed rpm : 1000

Rated speed rpm : 902  
rack travel mm : 15.50

Rated speed rpm : 942  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1000

Rated speed rpm : 903  
rack travel mm : 15.50

Rated speed rpm : 943  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1000

Rated speed rpm : 904  
rack travel mm : 15.50

Rated speed rpm : 944  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1000

Rated speed rpm : 905  
rack travel mm : 15.50

Rated speed rpm : 945  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1000

---

TORQUE CONTROL

Rated speed rpm : 850  
rack travel mm : 15.05  
Tolerance mm : + 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 15.05  
Tolerance mm : + 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 12.50  
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 350  
rack travel mm : 13.20  
Tolerance mm : + 0.20

Pressure hPa : 590  
rack travel mm : 14.55  
Tolerance mm : + 0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 221.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 7.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 12.50  
Tolerance mm : + 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 180.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 20.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 24.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.07.97  
Test oil : ISO 4113

Combination No. : 0 402 648 785

Injection pump  
Pump designation : PE8P120A320LS7844  
EP type number : 0 412 628 860

Governor  
Governor design. : RQV350...1050PA1318  
Governor no. : 0 421 814 185

Cust. part No. : 0270746302

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 130  
Tolerance l/h : ± 20.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

L20

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
                  : - 5- 4- 1

Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 15.30  
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 272.0
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 1.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000s.	: ± 4.0
<hr/>	
Speed	
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 5.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000s.	: 9.0
<hr/>	

Rated speed rpm	: 350
<hr/>	
Rack travel in mm	: 5.00
Tolerance mm	: ± 0.10
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 19.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 3.0
Check tolerance	
cm <sup>3</sup> /1000s.	: ± 6.0
<hr/>	
Speed	
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 6.0
Check tolerance	
cm <sup>3</sup> /1000s.	: 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1106
guide sleeve	
travel mm	: 8.02
Tolerance mm	: ± 0.15
<hr/>	
Rated speed rpm	: 350
guide sleeve	
travel mm	: 1.48
Tolerance mm	: ± 0.20
<hr/>	
Rated speed rpm	: 900
guide sleeve	
travel mm	: 5.69
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 580

guide sleeve	
travel mm	: 3.62
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 1204
guide sleeve	
travel mm	: 10.00
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 1300
guide sleeve	
travel mm	: 11.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

control lever	
position degree	: - 1
Rated speed rpm	: 1174
<hr/>	
Rack travel in mm	: 11.00
Tolerance mm	: ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1050
Aneroid pressure	
hPa	: 1800
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 272.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance	
cm <sup>3</sup> /1000s.	: ± 4.0
<hr/>	
Speed	
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 5.0
Check tolerance	
cm <sup>3</sup> /1000s.	: 9.0

CONTROL LEVER

control lever	
position degree	: 120.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 14.30
Rated speed rpm	: 1095
Tolerance 1/min	: ± 5
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1190
Tolerance 1/min	: ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1300

---

LOW IDLE

control lever  
position degree : 64.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250  
CRT mm min. : > 7.00

Testing:

Rated speed rpm : 350  
rack travel mm : 5.00  
Tolerance mm : ± 0.10

Rated speed rpm : 450

---

TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 15.30  
Tolerance mm : ± 0.05

Rated speed rpm : 800  
rack travel mm : 15.30  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : -

MEASUREMENT

Pressure hPa : 700  
rack travel mm : 4.60  
Tolerance mm : ± 0.20

Pressure hPa : 180  
rack travel mm : 0.20  
Tolerance mm : ± 0.05

---

Start interlock

L22

Rated speed rpm : > 100  
Rated speed rpm : < 270

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 290

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1800  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 274.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

REDUCED QUANTITY

Aneroid pressure  
hPa : 1800  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 206.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 270.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.00  
Tolerance mm :  $\pm$  0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm$  3.0

Check tolerance  
cm<sup>3</sup>/1000S. :  $\pm$  6.0

Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

# BOSCH INJ. PUMP TEST SPECIFICATIONS

## Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.07.97  
Test oil : ISO 4113

Combination No. : 0 402 648 920

Injection pump  
Pump designation : PE8P120A320LS7844  
EP type number : 0 412 628 260

Governor  
Governor design. : RQV350...1050PA870  
: -16  
Governor no. : 0 421 813 953

Cust. part No. :

## Customer-spec. information

Customer : MB-NFZ  
Motor : OM442 LA  
Power KW : 370.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 110  
Tolerance l/h : ± 10.0

Test nozzle holder  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

L24

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5  
x length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3  
: - 5- 4- 1

Phasing : 0-45-90-135-180  
: -225-270-315  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 8

## CRT ZERO POSITION

Rack travel in mm : 14.30  
Tolerance mm : ± 0.10

## BASIC SETTING

Rated speed rpm : 600



---

Rack travel in mm : 14.30  
Tolerance mm : ± 0.10

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 258.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 350

Rack travel in mm : 5.00  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

#### Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

### (B) SETTING OF INJECTION PUMP WITH GOVERNOR

---

#### GUIDE SLEEVE TRAVEL

Rated speed rpm : 1108  
guide sleeve  
travel mm : 8.05  
Tolerance mm : ± 0.25

Rated speed rpm : 350  
guide sleeve  
travel mm : 1.55  
Tolerance mm : ± 0.25

Rated speed rpm : 570  
guide sleeve  
travel mm : 3.55

Tolerance mm : ± 0.25

Rated speed rpm : 900  
guide sleeve  
travel mm : 5.65  
Tolerance mm : ± 0.25

Rated speed rpm : 1204  
guide sleeve  
travel mm : 10.05  
Tolerance mm : ± 0.25

---

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1125

Rack travel in mm : 17.25  
Tolerance mm : ± 0.75

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600  
Aneroid pressure  
hPa : 1100

Del. quantity  
cm<sup>3</sup>/1000 strokes : 258.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

#### Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

#### CONTROL LEVER

control lever  
position degree : 119.0  
tolerance degree : ± 4.0

#### RATED SPEED

rack travel mm : 14.30  
Rated speed rpm : 1095  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1195  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50

Rated speed rpm : 1300

---

LOW IDLE

control lever  
position degree : 67.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250  
CRT mm min. : > 6.60

Testing:

Rated speed rpm : 350  
rack travel mm : 5.00  
Tolerance mm : ± 0.10

Rated speed rpm : 450

---

TORQUE CONTROL

Rated speed rpm : 600  
rack travel mm : 14.30  
Tolerance mm : ± 0.10

Rated speed rpm : 1050  
rack travel mm : 15.30  
Tolerance mm : ± 0.10

Rated speed rpm : 800  
rack travel mm : 15.30  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

2-stage LDA setting

Rated speed rpm : 600  
Pressure hPa : 1100

MEASUREMENT

Pressure hPa : 290  
rack travel mm : -5.50  
Tolerance mm : ± 0.05

Pressure hPa : 780  
rack travel mm : -1.30  
Tolerance mm : ± 0.10

Pressure hPa : 1300  
rack travel mm : 0.45  
Tolerance mm : ± 0.05

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 270

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 290

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1800  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 272.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.5

---

Aneroid pressure  
hPa : 1800  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 274.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 140.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

REDUCED QUANTITY

Aneroid pressure  
hPa : 1800  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 206.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.5  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 270.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 14.0

---

#### LOW IDLE

Rated speed rpm : 350  
Rack travel in mm : 5.00  
Tolerance mm : +- 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.04.97  
Test oil : ISO 4113  
Combination No. : 0 402 649 816  
Injection pump  
Pump designation : PE10P120A520LS7853  
EP type number : 0 412 629 810  
Governor  
Governor design. : RQV300...1150PA1039  
                  : -2K  
Governor no. : 0 421 815 316  
Cust. part No. : 3-7225

Customer-spec. information  
Customer : MAN  
Motor : D 2840 LE401  
Power KW : 603.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet temp. °C : 40  
Tolerance °C : + 2.0  
Overflow valve : 1 417 413 025  
Inlet press. bar : 1.5  
Test nozzle holder assembly : 1 688 901 019  
Opening pressure bar : 208.5  
Tolerance bar : + 1.5  
Test lines : 1 680 750 075  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
Prestroke mm : 4.55  
Tolerance mm : + 0.05  
Check tolerance mm : + 0.10  
Rack travel in mm : 10.50  
Tolerance mm : + 1.50  
Firing order : 10-9A- 4- 1A- 8  
                  : - 7A- 6- 3A- 5  
Phasing : 0-45-72-117-144  
          : -189-216-261-288  
          : -333  
Tolerance : + 0.50  
Check tolerance \*NW : + 0.75  
Start of delivery mark  
Tolerance : + 0.10  
Check tolerance \*NW : + 0.75  
Barrel no. : 10

BASIC SETTING

Rated speed rpm : 1150  
Rack travel in mm : 13.35  
Tolerance mm : + 0.05  
Del. quantity cm<sup>3</sup>/1000 strokes : 295.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.80  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 45.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1214  
guide sleeve  
travel mm : 10.52  
Tolerance mm : ± 0.25

Rated speed rpm : 300  
guide sleeve  
travel mm : 2.24  
Tolerance mm : ± 0.25

Rated speed rpm : 799  
guide sleeve  
travel mm : 6.90  
Tolerance mm : ± 0.25

Rated speed rpm : 329  
guide sleeve  
travel mm : 2.75  
Tolerance mm : ± 0.25

Rated speed rpm : 379  
guide sleeve  
travel mm : 3.53  
Tolerance mm : ± 0.25

Rated speed rpm : 450

guide sleeve  
travel mm : 4.21  
Tolerance mm : ± 0.25

Rated speed rpm : 1450  
guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1280

Rack travel in mm : 12.50  
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
Aneroid pressure  
hPa : 1300

Del. quantity  
cm<sup>3</sup>/1000 strokes : 295.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
position degree : 121.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.30  
Rated speed rpm : 1203  
Tolerance 1/min : ± 8

rack travel mm : 4.00  
Rated speed rpm : 1325  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1450

---

LOW IDLE

control lever  
position degree : 76.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200  
CRT mm min. : > 8.20

Testing:

Rated speed rpm : 300  
rack travel mm : 6.80  
Tolerance mm : ± 0.10

Rated speed rpm : 345

---

TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 13.35  
Tolerance mm : ± 0.05

Rated speed rpm : 700  
rack travel mm : 12.00  
Tolerance mm : ± 0.10

Rated speed rpm : 900  
rack travel mm : 13.00  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 6.90  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 8.60  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1150  
Pressure hPa : 1300  
rack travel mm : 13.35  
Tolerance mm : ± 0.05

Rated speed rpm : 1150  
Pressure hPa : -  
rack travel mm : 9.60

MO2

Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 850  
rack travel mm : 12.15  
Tolerance mm : ± 0.15

Pressure hPa : 400  
rack travel mm : 9.95  
Tolerance mm : ± 0.05

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 240

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 260

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 250.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

---

Aneroid pressure  
hPa : 1300  
Rated speed rpm : 900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 280.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

Delivery for shutoff assemblies  
(refer to cam sequence).  
Arbitrary delivery for standard plunger  
barrel assemblies.

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 0.1  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.1

---

Delivery for shutoff assemblies  
(refer to cam sequence).  
Arbitrary delivery for standard plunger  
barrel assemblies.

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 170.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 19.70  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 110.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0

---

#### LOW IDLE

Delivery for standard plunger/barrel  
assemblies.  
Zero delivery for shutoff assemblies  
(refer to cam sequence).

Rated speed rpm : 300  
Rack travel in mm : 6.80  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 45.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 5.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.07.97  
Test oil : ISO 4113  
Combination No. : 0 402 676 832  
Injection pump  
Pump designation : PE6P120A320LS7898  
EP type number : 0 412 626 957  
Governor  
Governor design. : RSV350...1G00POA648  
Governor no. : 0 421 833 565

Cust. part No. : 0270748202

Customer-spec. information  
Customer : MB-NFZ  
Motor : OM441 A  
Power kW : 170.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 1 417 413 047  
Inlet press. bar : 1.5  
Tolerance bar : ± 0.1  
Overflow quantity  
min. l/h : 120  
Tolerance l/h : ± 10.0  
Test nozzle holde  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 075  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
Prestroke mm : 5.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
Rack travel in mm : 20.50  
Tolerance mm : ± 0.50  
Firing order : 6- 3- 5- 2- 4-  
: 1  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
Start of delivery mark  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75  
Barrel no. : 6

BASIC SETTING

Rated speed rpm : 980



Rack travel in mm : 11.90  
Tolerance mm : +- 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

---

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

Rated speed rpm : 350

Rack travel in mm : 5.00  
Tolerance mm : +- 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 6.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0

Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

#### GUIDE SLEEVE POSITION

control lever  
position degree : - 3  
Rated speed rpm : 800

Rack travel in mm : 0.50  
Tolerance mm : +- 0.20

governor spring  
pre-tension  
click setting x : 4.50

---

#### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980

Aneroid pressure  
hPa : 1000

Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.0

Tolerance  
cm<sup>3</sup>/1000 strokes : +- 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : +- 4.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

---

#### CONTROL LEVER

control lever  
position degree : 93.0  
tolerance degree : +- 4.0

#### ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1030  
rack travel mm : 10.90

Rated speed rpm : 1080  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : +- 0.55  
Rated speed rpm : 1300

Rated speed rpm : 1031  
rack travel mm : 10.90

Rated speed rpm : 1081  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : +- 0.55  
Rated speed rpm : 1300

Rated speed rpm : 1032  
rack travel mm : 10.90

Rated speed rpm : 1082  
Tolerance 1/min : +- 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1300

Rated speed rpm : 1033  
rack travel mm : 10.90

Rated speed rpm : 1083  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1300

Rated speed rpm : 1034  
rack travel mm : 10.90

Rated speed rpm : 1084  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1300

Rated speed rpm : 1035  
rack travel mm : 10.90

Rated speed rpm : 1085  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.85  
Tolerance mm : + 0.55  
Rated speed rpm : 1300

---

#### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 350  
rack travel mm : 5.00  
Tolerance mm : + 0.10

MO6

rack travel mm : 2.00  
Rated speed rpm : 405  
Tolerance 1/min : + 30

#### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

---

#### TORQUE CONTROL

Rated speed rpm : 980  
rack travel mm : 11.90  
Tolerance mm : + 0.05

Rated speed rpm : 600  
rack travel mm : 11.90  
Tolerance mm : + 0.05

Rated speed rpm : 400  
rack travel mm : 11.20  
Tolerance mm : + 0.15

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 400  
Pressure hPa : 1000  
rack travel mm : 11.90  
Tolerance mm : + 0.05

Rated speed rpm : 400  
Pressure hPa : -  
rack travel mm : 10.40  
Tolerance mm : + 0.15

#### MEASUREMENT

Rated speed rpm : 400

Pressure hPa : 300  
Tolerance mm : + 0.15

Pressure hPa : 350  
rack travel mm : 11.20  
Tolerance mm : + 0.15

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1000  
Rated speed rpm : 600

Del. quantity  
cm<sup>3</sup>/1000 strokes : 173.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Aneroid pressure  
hPa : 350  
Rated speed rpm : 400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 131.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 136.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 180.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 14.0

---

LOW IDLE

Rated speed rpm : 350

M07

Rack travel in mm : 5.00  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 19.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 6.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 10.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.06.97  
Test oil : ISO 4113  
Combination No. : 0 402 746 647  
Injection pump  
Pump designation : PES6P120A720RS7366  
EP type number : 0 412 726 933  
Governor  
Governor design. : RQV275...1100PA1208K  
Governor no. : 0 421 815 459

Cust. part No. :

Customer-spec. information  
Customer : IVECO-FRANCE  
Motor : 8460.41.4000

TEST BENCH REQUIREMENTS

Inlet line : 4.2  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
Overflow valve : 2 417 413 076  
Inlet press. bar : 2.5  
Tolerance bar : ± 0.1  
Test nozzle holde  
assembly : 1 688 901 105  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5  
Test lines : 1 680 750 089  
Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.45  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 276.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  


---

 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0  


---

 Rated speed rpm : 275  
 Rack travel in mm : 6.70  
 Tolerance mm : ± 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 23.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1155  
 guide sleeve  
 travel mm : 9.75  
 Tolerance mm : ± 0.15  
 Rated speed rpm : 275  
 guide sleeve  
 travel mm : 1.70  
 Tolerance mm : ± 0.20  
 Rated speed rpm : 790  
 guide sleeve  
 travel mm : 6.42  
 Tolerance mm : ± 0.25  
 Rated speed rpm : 460  
 guide sleeve  
 travel mm : 3.77  
 Tolerance mm : ± 0.25  
 Rated speed rpm : 1440  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

MD9

Aneroid pressure  
 hPa : 1200  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 276.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 9.0

CONTROL LEVER

control lever  
 position degree : 117.0  
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.40  
 Rated speed rpm : 1145  
 Tolerance 1/min : ± 5  
 Check  
 speed 1/min : ± 10

rack travel mm : 4.00  
 Rated speed rpm : 1260  
 Tolerance 1/min : ± 15  
 Check  
 speed 1/min : ± 20

rack travel mm : 0.50  
 Tolerance mm : ± 0.50  
 Rated speed rpm : 1350

LOW IDLE

control lever  
 position degree : 76.0  
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100  
 CRT mm min. : > 8.20

Testing:

Rated speed rpm : 275  
 rack travel mm : 6.70  
 Tolerance mm : ± 0.10

Rated speed rpm : 335

---

TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 12.45  
Tolerance mm : ± 0.05

Rated speed rpm : 650  
rack travel mm : 13.30  
Tolerance mm : ± 0.10

Rated speed rpm : 800  
rack travel mm : 13.30  
Tolerance mm : ± 0.20

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 800  
Pressure hPa : 1200  
rack travel mm : 13.30  
Tolerance mm : ± 0.10

Rated speed rpm : 800  
Pressure hPa : -  
rack travel mm : 9.40  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 800  
Pressure hPa : 290  
rack travel mm : 10.60  
Tolerance mm : ± 0.20

Pressure hPa : 520  
rack travel mm : 12.50  
Tolerance mm : ± 0.05

---

Start interlock

Rated speed rpm : > 170  
Rated speed rpm : < 220

Check speed 1/min : > 150  
Check speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

M10

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 283.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

Aneroid pressure  
hPa : 1200  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 293.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 152.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 12.00  
Tolerance mm : ± 0.30  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

LOW IDLE

Rated speed rpm : 275  
Rack travel in mm : 6.70  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.01.97  
Test oil : ISO 4113

Combination No. : 0 402 796 814

Injection pump  
Pump designation : PES6P120A72ORS7367  
EP type number : 0 412 726 932

Governor  
Governor design. : RE30  
Governor no. : 0 421 890 026

Cust. part No. :

Customer-spec. information  
Customer : IVECO-FRANCE  
Motor : 8460.41.6000

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder assembly : 1 688 901 105

Opening pressure bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 2.85  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10

Rack travel in mm : 20.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check tolerance °NW : ± 0.75

Start of delivery blocking

Check tolerance °NW : ± 0.40

Barrel no. : 1

(B) POSITIONER TESTING  
Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V



TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min-1: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check tolerance V : +/- 1.20

Engine speed min-1: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

---

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1050  
Uact V : 2.900  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 296.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0  
FUEL DELIVERY CHARACTERISTICS

---

Rated speed rpm : 500  
Uact V : 2.690  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 238.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 6.0

TEST POINT L1

Rated speed rpm : 275  
Uact V : 1.600  
Tolerance Volt : +/- 0.060  
Check tolerance  
Volt : +/- 0.080  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 3.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.04.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 840 301  
  
Injection pump  
Pump designation : PE12P120A520LS8507  
EP type number : 0 412 820 201  
  
Governor  
Governor design. : RQV300...1150PA1039  
                  : -3K  
Governor no. : 0 421 815 980  
  
Cust. part No. : 51.11103-7329

Customer-spec. information  
Customer : MAN  
Motor : D 2842 LE 406  
Power KW : 882.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 1 417 413 078  
  
Inlet press. bar : 3.0  
Tolerance bar : ± 0.1  
  
Overflow quantity  
min. l/h : 180  
Tolerance l/h : ± 15.0  
  
Test nozzle holde  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

M15

Test lines : 1 680 750 089  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 6.45  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 13.00  
Tolerance mm : ± 0.50  
  
Firing order : 12-1A- 5- 9A- 8  
                  : - 3A- 4-11A- 10  
                  : - 2A- 6  
  
Phasing : 0-45-60-105-120  
          : -165-180-225-240  
          : -285-300-345  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery mark  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75  
  
Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.50  
 Tolerance mm : + 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 331.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

Spread

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 300

Rack travel in mm : 5.20  
 Tolerance mm : + 0.10  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 49.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 6.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1206  
 guide sleeve  
 travel mm : 9.84  
 Tolerance mm : + 0.25

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.68  
 Tolerance mm : + 0.25

Rated speed rpm : 797  
 guide sleeve  
 travel mm : 6.36  
 Tolerance mm : + 0.25

Rated speed rpm : 460  
 guide sleeve  
 travel mm : 3.78  
 Tolerance mm : + 0.25

Rated speed rpm : 1500  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1330

Rack travel in mm : 11.80  
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150  
 Aneroid pressure  
 hPa : 2000  
 Del. quantity  
 cm<sup>3</sup>/1000 strokes : 331.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0  
 Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

CONTROL LEVER

control lever  
 position degree : 118.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.50  
 Rated speed rpm : 1195  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1325  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1400

---

LOW IDLE

control lever  
position degree : 71.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200  
CRT mm min. : > 7.40

Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : ± 0.10

Rated speed rpm : 340

---

TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 13.50  
Tolerance mm : ± 0.05

Rated speed rpm : 1000  
rack travel mm : 13.50  
Tolerance mm : ± 0.10

Rated speed rpm : 850  
rack travel mm : 12.60  
Tolerance mm : ± 0.10

Rated speed rpm : 650  
rack travel mm : 11.25  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 6.30  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 7.40  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1000  
Pressure hPa : 2000  
rack travel mm : 13.50  
Tolerance mm : ± 0.05

Rated speed rpm : 1000  
Pressure hPa : -  
rack travel mm : 7.60  
Tolerance mm : ± 0.15

MEASUREMENT

Rated speed rpm : 1000  
Pressure hPa : 220  
rack travel mm : 7.95  
Tolerance mm : ± 0.05

Pressure hPa : 1050  
rack travel mm : 11.75  
Tolerance mm : ± 0.15

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 335.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 850  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 315.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 288.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

Delivery for shutoff assemblies  
(refer to cam sequence).  
Arbitrary delivery for standard plunger  
barrel assemblies.

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 0.1  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.1  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 0.1

---

Delivery for shutoff assemblies  
(refer to cam sequence).  
Arbitrary delivery for standard plunger  
barrel assemblies.

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 15.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0

M18

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

#### LOW IDLE

Delivery for standard plunger/barrel  
assemblies.  
Zero delivery for shutoff assemblies  
(refer to cam sequence).

Rated speed rpm : 300  
Rack travel in mm : 5.20  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 49.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.04.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 840 302  
  
Injection pump  
Pump designation : PE12P120A520LS8507  
EP type number : 0 412 820 201  
  
Governor  
Governor design. : RQV300...1050PA1039  
                  : -4K  
Governor no. : 0 421 815 498  
  
Cust. part No. : 51.11103-7489

---

Customer-spec. information  
Customer : MAN  
Motor : D 2842 LE 408  
Power KW : 735.0

---

TEST BENCH REQUIREMENTS

Inlet line : 3.2  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : + 2.0  
  
Overflow valve : 2 417 413 078  
  
Inlet press. bar : 3.0  
Tolerance bar : + 0.1  
  
Overflow quantity  
min. l/h : 185  
Tolerance l/h : + 15.0  
  
Test nozzle holde  
assembly : 1 688 901 105  
  
Opening pressure  
bar : 208.5  
Tolerance bar : + 1.5

Test lines : 1 680 750 089  
Outside diameter : 8.0  
x inside diameter : 3.0  
x length mm : 600

---

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

---

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : + 1.0  
  
Prestroke mm : 6.45  
Tolerance mm : + 0.05  
Check  
tolerance mm : + 0.10  
  
Rack travel in mm : 13.00  
Tolerance mm : + 0.50  
  
Firing order : 12-1A- 5- 9A- 8  
                  : - 3A- 4-11A- 10  
                  : - 2A- 6  
  
Phasing : 0-45-60-105-120  
          : -165-180-225-240  
          : -285-300-345  
Tolerance : + 0.50  
Check  
tolerance °NW : + 0.75  
  
Start of delivery blocking  
Tolerance : + 0.10  
Check  
tolerance °NW : + 0.75  
  
Barrel no. : 12

---

BASIC SETTING

Rated speed rpm : 1050

---

Rack travel in mm : 11.80  
 Tolerance mm : + 0.05

---

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 275.0

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

---

Speed

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

---

Rated speed rpm : 300

Rack travel in mm : 5.20  
 Tolerance mm : + 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 49.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 8.0

Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1122  
 guide sleeve  
 travel mm : 10.59  
 Tolerance mm : + 0.15

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.61  
 Tolerance mm : + 0.20

Rated speed rpm : 768  
 guide sleeve  
 travel mm : 6.62  
 Tolerance mm : + 0.25

Rated speed rpm : 470  
 guide sleeve  
 travel mm : 3.89  
 Tolerance mm : + 0.25

Rated speed rpm : 1320  
 guide sleeve  
 travel mm : 13.50  
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1185

Rack travel in mm : 10.80  
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050  
 Aneroid pressure  
 hPa : 1500

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 275.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
 cm<sup>3</sup>/1000S. : + 4.0

Speed

Tolerance  
 cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
 cm<sup>3</sup>/1000S. : 12.0

CONTROL LEVER

control lever  
 position degree : 119.0  
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.80  
 Rated speed rpm : 1115  
 Tolerance 1/min : + 5

rack travel mm : 4.00  
 Rated speed rpm : 1185  
 Tolerance 1/min : + 15

rack travel mm : 0.50  
 Tolerance mm : + 0.50  
 Rated speed rpm : 1300



---

LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200  
CRT mm min. : > 7.00

Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : ± 0.10

Rated speed rpm : 340

---

TORQUE CONTROL

Rated speed rpm : 1050  
rack travel mm : 11.80  
Tolerance mm : ± 0.05

Rated speed rpm : 800  
rack travel mm : 11.15  
Tolerance mm : ± 0.10

Rated speed rpm : 650  
rack travel mm : 10.35  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 6.30  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 7.40  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1000  
Pressure hPa : 1500  
rack travel mm : 11.80  
Tolerance mm : ± 0.05

Rated speed rpm : 1000

M21

Pressure hPa : -  
rack travel mm : 7.75  
Tolerance mm : ± 0.15

MEASUREMENT

Rated speed rpm : 1000

Pressure hPa : 300  
rack travel mm : 8.15  
Tolerance mm : ± 0.05

Pressure hPa : 900  
rack travel mm : 10.85  
Tolerance mm : ± 0.15

---

Start interlock

Rated speed rpm : > 100  
Rated speed rpm : < 220

Check  
speed 1/min : > 80  
Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 275.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0

---

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 260.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 6.0

---

Delivery for shutoff assemblies  
(refer to cam sequence).  
Arbitrary delivery for standard plunger  
barrel assemblies.

Aneroid pressure  
hPa : -

Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 0.1  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 0.1  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 0.1

---

Delivery for shutoff assemblies  
(refer to cam sequence).  
Arbitrary delivery for standard plunger  
barrel assemblies.

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 15.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 185.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : ± 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 135.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 19.0

---

#### LOW IDLE

Delivery for standard plunger/barrel

M22

assemblies.  
Zero delivery for shutoff assemblies  
(refer to cam sequence).

Rated speed rpm : 300  
Rack travel in mm : 5.20  
Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 49.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 13.03.97  
Test oil : ISO 4113

Combination No. : 0 402 846 063

Injection pump  
Pump designation : PE6P120A320RS8024-1  
EP type number : 0 412 826 029

Governor  
Governor design. : RQV250...1100PA1072  
                  : -5K  
Governor no. : 0 421 815 977

Cust. part No. : 477952-P05 v. 11.95

Customer-spec. information  
Customer : VOLVO-TRUCK  
Motor : TD74 EU  
Power KW : 210.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 089

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.60  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 7.60  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
                  : 4

Phasing : 0-60-120-180-240  
          : -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.60  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 211.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

Rated speed rpm : 300

Rack travel in mm : 4.80  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1176  
guide sleeve  
travel mm : 10.15  
Tolerance mm : ± 0.25

Rated speed rpm : 250  
guide sleeve  
travel mm : 1.33  
Tolerance mm : ± 0.25

Rated speed rpm : 733  
guide sleeve  
travel mm : 5.39  
Tolerance mm : ± 0.25

Rated speed rpm : 307  
guide sleeve  
travel mm : 2.29  
Tolerance mm : ± 0.25

Rated speed rpm : 357

guide sleeve  
travel mm : 2.97  
Tolerance mm : ± 0.25

Rated speed rpm : 390  
guide sleeve  
travel mm : 3.22  
Tolerance mm : ± 0.25

Rated speed rpm : 1390  
guide sleeve  
travel mm : 13.50  
Tolerance mm : ± 0.50

---

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1290

Rack travel in mm : 7.50  
Tolerance mm : ± 2.50

---

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 211.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

CONTROL LEVER

control lever  
position degree : 68.0  
tolerance degree : ± 4.0

control lever  
position degree : 120.0  
tolerance degree : ± 4.0

---

RATED SPEED

rack travel mm : 12.60  
Rated speed rpm : 1135  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1230  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1320

---

#### LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : ± 4.0

control lever  
position degree : 20.0  
tolerance degree : ± 4.0

#### Setting point w/out bumper spring

Rated speed rpm : 200  
CRT mm min. : > 6.70

#### Testing:

Rated speed rpm : 300  
rack travel mm : 4.80  
Tolerance mm : ± 0.10

Rated speed rpm : 375

---

#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 13.60  
Tolerance mm : ± 0.05

Rated speed rpm : 650  
rack travel mm : 13.10  
Tolerance mm : ± 0.10

Rated speed rpm : 300  
rack travel mm : 11.50  
Tolerance mm : ± 0.30

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1100  
Pressure hPa : 1500  
rack travel mm : 13.60

M25

Tolerance mm : ± 0.10

Rated speed rpm : 1100  
Pressure hPa : -  
rack travel mm : 7.75  
Tolerance mm : ± 0.10

#### MEASUREMENT

Rated speed rpm : 1100  
Pressure hPa : 885  
rack travel mm : 5.50  
Tolerance mm : ± 0.20

Pressure hPa : 190  
rack travel mm : 0.25  
Tolerance mm : ± 0.05

---

#### FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 243.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 115.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### LOW IDLE

Rated speed rpm : 300  
Rack travel in mm : 4.80

Tolerance mm : ± 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 23.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 20.09.95  
Test oil : ISO 4113

Combination No. : 0 402 846 068

Injection pump  
Pump designation : PE6P110A320RS8036  
EP type number : 0 412 816 012

Governor  
Governor design. : RQV300...1200PA1043  
: -2  
Governor no. : 0 421 814 155

Cust. part No. : 11030951  
: -P02 v.09.95

Customer-spec. information  
Customer : VME  
Motor : TD73KCE  
Power KW : 187.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

M27

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.80  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 198.0

Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : ± 3.0

---

Spread

---

Tolerance  
 cm<sup>3</sup>/1000 strokes : 7.0

---

Check tolerance  
 cm<sup>3</sup>/1000S. : 11.0

---

Rated speed rpm : 300

Rack travel in mm : 4.50  
 Tolerance mm : ± 0.10

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 24.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 2.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 5.0

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 5.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1256  
 guide sleeve  
 travel mm : 8.24  
 Tolerance mm : ± 0.25

Rated speed rpm : 300  
 guide sleeve  
 travel mm : 1.19  
 Tolerance mm : ± 0.25

Rated speed rpm : 857  
 guide sleeve  
 travel mm : 5.21  
 Tolerance mm : ± 0.25

Rated speed rpm : 385  
 guide sleeve  
 travel mm : 1.98  
 Tolerance mm : ± 0.25

Rated speed rpm : 435

guide sleeve  
 travel mm : 2.45  
 Tolerance mm : ± 0.25

Rated speed rpm : 520  
 guide sleeve  
 travel mm : 3.04  
 Tolerance mm : ± 0.25

Rated speed rpm : 1550  
 guide sleeve  
 travel mm : 11.50  
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
 position degree : - 1  
 Rated speed rpm : 1285

Rack travel in mm : 16.50  
 Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
 Aneroid pressure  
 hPa : 1500

Del. quantity  
 cm<sup>3</sup>/1000 strokes : 198.0  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : ± 1.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : ± 3.0

Spread  
 Tolerance  
 cm<sup>3</sup>/1000 strokes : 7.0  
 Check tolerance  
 cm<sup>3</sup>/1000S. : 11.0

CONTROL LEVER

control lever  
 position degree : 47.0  
 tolerance degree : ± 4.0

control lever  
 position degree : 115.0  
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.80  
 Rated speed rpm : 1245  
 Tolerance 1/min : ± 5



rack travel mm : 4.00  
Rated speed rpm : 1350  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1450

---

LOW IDLE

control lever  
position degree : 80.0  
tolerance degree : ± 4.0

control lever  
position degree : 14.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 6.60

Testing:

Rated speed rpm : 300  
rack travel mm : 4.50  
Tolerance mm : ± 0.10

Rated speed rpm : 340

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 11.80  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 11.80  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 7.80  
Tolerance mm : ± 0.10

MEASUREMENT

NO1

Rated speed rpm : 500

Pressure hPa : 880  
rack travel mm : 3.60  
Tolerance mm : ± 0.20

Pressure hPa : 240  
rack travel mm : 0.25  
Tolerance mm : ± 0.05

---

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -  
Rated speed rpm : 700

Del. quantity  
cm<sup>3</sup>/1000 strokes : 114.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 4.50  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread  
Tolerance

cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance

cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 14.10.96  
Test oil : ISO 4113

Combination No. : 0 402 846 075

Injection pump  
Pump designation : PE6P110A320RS8042  
EP type number : 0 412 816 013

Governor  
Governor design. : RQV300...1050PA1183  
: -1  
Governor no. : 0 421 814 159

Cust. part No. : 11032711  
: -P01 V.08/96

Customer-spec. information  
Customer : VCE  
Motor : TD 73 KDE  
Power kW : 153.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 101

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

N02

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 3.85  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 11.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.90  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 178.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 4.50  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1107  
guide sleeve  
travel mm : 7.86  
Tolerance mm : ± 0.15

Rated speed rpm : 300  
guide sleeve  
travel mm : 1.17  
Tolerance mm : ± 0.20

Rated speed rpm : 804  
guide sleeve  
travel mm : 5.19  
Tolerance mm : ± 0.25

Rated speed rpm : 530  
guide sleeve  
travel mm : 3.11  
Tolerance mm : ± 0.25

Rated speed rpm : 1400

guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1259

Rack travel in mm : 9.80  
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 178.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 3.0

Spreed

Tolerance  
cm<sup>3</sup>/1000 strokes : 7.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

CONTROL LEVER

control lever  
position degree : 45.0  
tolerance degree : ± 4.0

control lever  
position degree : 112.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.90  
Rated speed rpm : 1095  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1175  
Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1300

---

LOW IDLE

control lever  
position degree : 82.0  
tolerance degree : ± 4.0

control lever  
position degree : 16.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 7.50

Testing:

Rated speed rpm : 300  
rack travel mm : 4.50  
Tolerance mm : ± 0.30

Rated speed rpm : 340

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 10.90  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 10.90  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 8.00  
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500  
Pressure hPa : 710  
rack travel mm : 2.60  
Tolerance mm : ± 0.20

Pressure hPa : 270  
rack travel mm : 0.25

NO4

Tolerance mm : ± 0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 117.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 4.0

---

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 4.50  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 24.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5  
Check tolerance  
cm<sup>3</sup>/1000s. : ± 5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000s. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 16.07.97  
Test oil : ISO 4113

Combination No. : 0 402 846 076

Injection pump  
Pump designation : PE6P120A320RS8043  
EP type number : 0 412 826 035

Governor  
Governor design. : RQV30J...1100PA1248  
Governor no. : 0 421 814 165

Cust. part No. : 11031330  
: -P02 v.03.97

Customer-spec. information

Customer : VCE  
Motor : TD 103 KBE  
Power KW : 216.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 150  
Tolerance l/h : ± 20.0

Test nozzle holde  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

N05

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 11.00  
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.30  
Tolerance mm : ± 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 270.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

Rated speed rpm : 330

Rack travel in mm : 4.00  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 29.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1140  
guide sleeve  
travel mm : 7.71

Tolerance mm : ± 0.15

Rated speed rpm : 330  
guide sleeve  
travel mm : 2.10

Tolerance mm : ± 0.20

Rated speed rpm : 1080  
guide sleeve  
travel mm : 6.80

Tolerance mm : ± 0.25

Rated speed rpm : 520  
guide sleeve  
travel mm : 4.67

N06

Tolerance mm : ± 0.25

Rated speed rpm : 1370  
guide sleeve  
travel mm : 11.50

Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1240

Rack travel in mm : 11.30  
Tolerance mm : ± 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 270.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

CONTROL LEVER

control lever  
position degree : 60.0  
tolerance degree : ± 4.0

control lever  
position degree : 115.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.30  
Rated speed rpm : 1130

Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1220

Tolerance 1/min : ± 15

rack travel mm : 0.50  
Tolerance mm : ± 0.50

Rated speed rpm : 1275

---

LOW IDLE

control lever  
position degree : 65.0  
tolerance degree : ± 4.0

control lever  
position degree : 14.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 230

CRT mm min. : > 6.00

Testing:

Rated speed rpm : 330  
rack travel mm : 4.00  
Tolerance mm : ± 0.10

Rated speed rpm : 400

---

TORQUE CONTROL

Rated speed rpm : 700  
rack travel mm : 12.30  
Tolerance mm : ± 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.30  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.70  
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 550  
rack travel mm : 2.20  
Tolerance mm : ± 0.20

N07

Pressure hPa : 230  
rack travel mm : 0.25  
Tolerance mm : ± 0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 700  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 202.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

LOW IDLE

Rated speed rpm : 330

Rack travel in mm : 4.00  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 29.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 19.12.96  
Test oil : ISO 4113

Combination No. : 0 402 846 077

Injection pump  
Pump designation : PE6P120A32ORS8043  
EP type number : 0 412 826 035

Governor  
Governor design. : RQV300...1050PA1247  
Governor no. : 0 421 814 163

Cust. part No. : 11031331-P02v.11.96

Customer-spec. information  
Customer : VCE  
Motor : TD 103 KCE  
Power kW : 189.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 205  
Tolerance l/h : ± 20.0

Test nozzle holde  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.25  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 11.00  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 500

Rack travel in mm : 12.90



Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 322.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

---

Rated speed rpm : 320

Rack travel in mm : 4.60  
Tolerance mm : ± 0.10

Del. quantity  
cm<sup>3</sup>/1000 strokes : 50.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5

Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1102  
guide sleeve  
travel mm : 7.80  
Tolerance mm : ± 0.15

Rated speed rpm : 320  
guide sleeve  
travel mm : 1.34  
Tolerance mm : ± 0.20

Rated speed rpm : 802  
guide sleeve  
travel mm : 5.18  
Tolerance mm : ± 0.25

Rated speed rpm : 530

guide sleeve  
travel mm : 3.11  
Tolerance mm : ± 0.25

Rated speed rpm : 1400  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1250

Rack travel in mm : 10.50  
Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 500  
Aneroid pressure  
hPa : 1500

Del. quantity  
cm<sup>3</sup>/1000 strokes : 322.0

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

Spread

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 11.0

CONTROL LEVER

control lever  
position degree : 45.0  
tolerance degree : ± 4.0

control lever  
position degree : 110.0  
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.80  
Rated speed rpm : 1090  
Tolerance 1/min : ± 5

rack travel mm : 4.00  
Rated speed rpm : 1190  
Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : ± 0.50  
Rated speed rpm : 1250

---

LOW IDLE

control lever  
position degree : 82.0  
tolerance degree : ± 4.0

control lever  
position degree : 18.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 220  
CRT mm min. : > 7.40

Testing:

Rated speed rpm : 320  
rack travel mm : 4.60  
Tolerance mm : ± 0.10

Rated speed rpm : 380

---

TORQUE CONTROL

Rated speed rpm : 500  
rack travel mm : 12.90  
Tolerance mm : ± 0.05

Rated speed rpm : 1050  
rack travel mm : 11.80  
Tolerance mm : ± 0.10

Rated speed rpm : 720  
rack travel mm : 12.10  
Tolerance mm : ± 0.15

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 12.90  
Tolerance mm : ± 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 9.50

N10

Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 970  
rack travel mm : 2.90  
Tolerance mm : ± 0.20

Pressure hPa : 230  
rack travel mm : 0.25  
Tolerance mm : ± 0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 1500  
Rated speed rpm : 1050  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 224.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 212.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

LOW IDLE

Rated speed rpm : 320

Rack travel in mm : 4.60  
Tolerance mm : ± 0.10  
Del. quantity

cm<sup>3</sup>/1000 strokes : 50.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 2.5  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 5.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0

Check tolerance  
cm3/1000S. : 8.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 24.04.97  
Test oil : ISO 4113

Combination No. : 0 402 848 300

Injection pump  
Pump designation : PE8P120A520LS8518  
EP type number : 0 412 828 201

Governor  
Governor design. : RQV300...1150PA1323K  
Governor no. : 0 421 815 963

Cust. part No. : 51.11103-7492

Customer-spec. information

Customer : MAN  
Motor : D 2848 LE 403  
Power kW : 583.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Overflow quantity  
min. l/h : 170  
Tolerance l/h : ± 15.0

Test nozzle holde  
assembly : 1 688 901 105

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 5.65  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 13.00  
Tolerance mm : ± 0.50

Firing order : 8-7A- 2- 6A- 3  
                  : - 5A- 4

Phasing : 0-45-90-135-180  
          : -225-270-315  
Tolerance : ± 0.50  
Check  
tolerance °NW : ± 0.75

Start of delivery blocking

Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.00  
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 335.0
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 1.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 4.0
<hr/>	
Spread	
<hr/>	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 8.0
<hr/>	
Check tolerance	
cm <sup>3</sup> /1000S.	: 12.0
<hr/>	

Rated speed rpm	: 300
Rack travel in mm	: 5.20
Tolerance mm	: ± 0.10
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 49.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 3.0
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 8.0
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 8.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1206
guide sleeve	
travel mm	: 9.84
Tolerance mm	: ± 0.15
<hr/>	
Rated speed rpm	: 300
guide sleeve	
travel mm	: 1.61
Tolerance mm	: ± 0.20
<hr/>	
Rated speed rpm	: 797
guide sleeve	
travel mm	: 6.36
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 460

guide sleeve	
travel mm	: 3.78
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 1500
guide sleeve	
travel mm	: 13.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 1323
Rack travel in mm	: 13.00
Tolerance mm	: ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1150
Aneroid pressure	
hPa	: 2000
Del. quantity	
cm <sup>3</sup> /1000 strokes	: 335.0
Tolerance	
cm <sup>3</sup> /1000 strokes	: ± 1.0
Check tolerance	
cm <sup>3</sup> /1000S.	: ± 4.0
Spread	
Tolerance	
cm <sup>3</sup> /1000 strokes	: 8.0
Check tolerance	
cm <sup>3</sup> /1000S.	: 12.0

CONTROL LEVER

control lever	
position degree	: 118.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 13.00
Rated speed rpm	: 1195
Tolerance 1/min	: ± 5
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1320
Tolerance 1/min	: ± 15
<hr/>	
rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 1475

LOW IDLE

control lever  
position degree : 72.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200  
CRT mm min. : > 7.39

Testing:

Rated speed rpm : 300  
rack travel mm : 5.20  
Tolerance mm : ± 0.10

Rated speed rpm : 332

---

TORQUE CONTROL

Rated speed rpm : 1150  
rack travel mm : 14.00  
Tolerance mm : ± 0.05

Rated speed rpm : 1000  
rack travel mm : 13.10  
Tolerance mm : ± 0.10

Rated speed rpm : 850  
rack travel mm : 12.00  
Tolerance mm : ± 0.10

Rated speed rpm : 650  
rack travel mm : 11.20  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 6.30  
Tolerance mm : ± 0.10

Rated speed rpm : 500  
rack travel mm : 7.40  
Tolerance mm : ± 0.10

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 1150  
Pressure hPa : 2000  
rack travel mm : 14.00  
Tolerance mm : ± 0.05

Rated speed rpm : 1150  
Pressure hPa : -

rack travel mm : 7.80  
Tolerance mm : ± 0.15

MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 330  
rack travel mm : 8.10  
Tolerance mm : ± 0.05

Pressure hPa : 1100  
rack travel mm : 12.20  
Tolerance mm : ± 0.15

---

Start interlock

Rated speed rpm : > 170  
Rated speed rpm : < 230

Check  
speed 1/min : > 150  
Check  
speed 1/min : < 240

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 1000  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 315.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

---

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 850  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 290.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 8.0

---

Aneroid pressure  
hPa : 2000  
Rated speed rpm : 650  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 279.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 8.0

---

Delivery for shutoff assemblies  
(refer to cam sequence).  
Arbitrary delivery for standard plunger  
barrel assemblies.

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 0.1  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 0.1  
Check tolerance  
cm<sup>3</sup>/1000S. : + 0.1

---

Delivery for shutoff assemblies  
(refer to cam sequence).  
Arbitrary delivery for standard plunger  
barrel assemblies.

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 165.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 15.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 175.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

#### STARTING FUEL DELIVERY

Rated speed rpm : 100  
rack travel mm : 20.50  
Tolerance mm : + 0.50  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 130.0

N15

Tolerance  
cm<sup>3</sup>/1000 strokes : + 15.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 19.0

---

#### LOW IDLE

Delivery for standard plunger/barrel  
assemblies.  
Zero delivery for shutoff assemblies  
(refer to cam sequence).

Rated speed rpm : 300

Rack travel in mm : 5.20  
Tolerance mm : + 0.10  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 49.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 8.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 30.07.96  
Test oil : ISO 4113

Combination No. : 0 402 896 015

Injection pump  
Pump designation : PE6P120A32ORS8033  
EP type number : 0 412 826 031

Governor  
Governor design. : RE30  
Governor no. : 0 421 890 027

Cust. part No. : 425758 P04 v. 09/95

Customer-spec. information  
Customer : VOLVO-TRUCK  
Motor : DH 10 A  
Power kW : 265.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 073

Inlet press. bar : 3.0  
Tolerance bar : ± 0.1

Test nozzle holder assembly : 1 688 901 103

Opening pressure bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

N16

x inside diameter : 2.0  
x length mm : 600

REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.40  
Tolerance mm : ± 0.05  
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

(B) POSITIONER TESTING  
Warm-up time: 3 minutes at  
n=600 min<sup>-1</sup>, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min<sup>-1</sup>: 0



Setting point  
(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check  
tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.  
CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check  
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min-1: 60  
Amplitude V : 1.4

N17

Tolerance V : +/- 0.6  
Check  
tolerance V : +/- 1.20

Engine speed min-1: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

---

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 600  
Uact V : 2.800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 295.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 4.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0  
FUEL DELIVERY CHARACTERISTICS

---

Rated speed rpm : 950  
Uact V : 2.800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 252.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 6.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

---

Rated speed rpm : 950  
Uact V : 2.200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 178.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 6.0

TEST POINT L1

Rated speed rpm : 250  
Uact V : 1.470  
Tolerance Volt : +/- 0.060

Check tolerance  
Volt :  $\pm 0.060$   
Del. quantity  
cm<sup>3</sup>/1000 strokes : 21.0  
Tolerance  
cm<sup>3</sup>/1000 strokes :  $\pm 3.0$   
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 15.08.95  
Test oil : ISO 4113

Combination No. : 0 402 896 017

Injection pump  
Pump designation : PE6P120A320RS8035  
EP type number : 0 412 826 033

Governor  
Governor design. : RE30  
Governor no. : 0 421 890 030

Cust. part No. : 3825439-SK0EV.  
: -AUDIT

Customer-spec. information  
Customer : PENTA  
Motor : TAMD 72 P-A  
Power KW : 316.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5  
Tolerance bar : ± 0.1

Test nozzle holder  
assembly : 1 688 901 103

Opening pressure  
bar : 208.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

REMARKS

Pump-specific values  
in Section (B)  
must be observed!

(A) INJECTION PUMP SETTINGS  
No basic setting.  
Setting of constant delivery  
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 25.0  
Tolerance bar : ± 1.0

Prestroke mm : 4.05  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10

Rack travel in mm : 10.50  
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-  
: 4

Phasing : 0-60-120-180-240  
: -300

Start of delivery mark

Barrel no. : 1

(B) POSITIONER TESTING  
Warm-up time: 3 minutes at  
n=600 min-1, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR  
POSITION

Engine speed min-1: 0

Setting point

(P, R and H pump)

Uact V : 3.100  
CRT mm : 13.00  
Tolerance mm : +/- 0.05  
Check tolerance mm : +/- 0.10

Check value  
(P, R and H pump)

Uact V : 1.700  
CRT mm : 6.15  
Tolerance mm : +/- 0.25  
Check tolerance mm : +/- 0.30

Setting point  
(M pump)

Uact V : 3.100  
CRT mm : 12.50  
Tolerance mm : +/- 0.05  
Check tolerance mm : +/- 0.10

Check value  
(M pump)

Uact V : 1.700  
CRT mm : 5.50  
Tolerance mm : +/- 0.25  
Check tolerance mm : +/- 0.30

Stop position

Uact V : Value with  
deenergised adjusting magnet  
and control rod in  
stop position.

CRT mm : 0.75  
Tolerance mm : +/- 0.25  
Check tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR  
(All P and R pumps not  
H and M pumps)

Test with control rod  
in stop position

Engine speed min-1: 60  
Amplitude V : 1.4  
Tolerance V : +/- 0.6  
Check

tolerance V : +/- 1.20

Engine speed min-1: 600  
Difference  
Amplitude to  
Amplitude V : max.1.4

---

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 600  
Uact V : 2.800  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 305.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 4.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 11.0  
FUEL DELIVERY CHARACTERISTICS

---

Rated speed rpm : 1300  
Uact V : 2.600  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 215.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

---

Rated speed rpm : 1000  
Uact V : 2.400  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 208.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : +/- 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : +/- 6.0  
Spreed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

---

Rated speed rpm : 800

Uact V : 2.200  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 191.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 10.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 14.0

TEST POINT L1

Rated speed rpm : 275  
Uact V : 1.600  
Tolerance Volt : ± 0.060  
Check tolerance  
Volt : ± 0.060  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 88.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

---

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.07.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 946 024A  
  
Injection pump  
Pump designation : PES6P120A720RS8045  
EP type number : 0 412 926 028  
  
Governor  
Governor design. : RQ750PA1299  
Governor no. : 0 421 801 810  
  
Cust. part No. : 1E88641 - Version A

Customer-spec. information  
Customer : SCANIA  
Motor : DSC1158A

TEST BENCH REQUIREMENTS

Inlet Line : EHAB  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 082  
  
Inlet press. bar : 2.5  
Tolerance bar : ± 0.1  
  
Overflow quantity  
min. l/h : 90  
Tolerance l/h : ± 20.0  
  
Test nozzle holder  
assembly : 1 688 901 104  
  
Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008  
Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 3.65  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance °NW : ± 0.75  
  
Start of delivery blocking  
Tolerance : ± 0.10  
Check  
tolerance °NW : ± 0.75  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

---

Rack travel in mm : 13.70  
Tolerance mm : ± 0.05

---

Del. quantity  
cm<sup>3</sup>/1000 strokes : 338.0

---

Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : ± 10.0

---

Spread

---

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

---

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

---

Rack travel in mm : 3.30  
Tolerance mm : ± 0.20  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 5.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 9.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

---

GUIDE SLEEVE TRAVEL

Rated speed rpm : 907  
guide sleeve  
travel mm : 5.23  
Tolerance mm : ± 0.15

Rated speed rpm : 590  
guide sleeve  
travel mm : -9.42  
Tolerance mm : ± 0.25

Rated speed rpm : 1010  
guide sleeve  
travel mm : 18.06

Tolerance mm : ± 0.25

Rated speed rpm : 953  
guide sleeve  
travel mm : 10.00  
Tolerance mm : ± 0.25

Rated speed rpm : 1010  
guide sleeve  
travel mm : 11.50  
Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 338.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 10.0  
Spread  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

CONTROL LEVER

control lever  
position degree : 29.0  
tolerance degree : ± 4.0

control lever  
position degree : 90.0  
tolerance degree : ± 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 900  
rack travel mm : 12.70

Rated speed rpm : 936  
Tolerance 1/min : ± 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1000

Rated speed rpm : 901  
rack travel mm : 12.70

Rated speed rpm : 937  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1000

Rated speed rpm : 902  
rack travel mm : 12.70

Rated speed rpm : 938  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1000

Rated speed rpm : 903  
rack travel mm : 12.70

Rated speed rpm : 939  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1000

Rated speed rpm : 904  
rack travel mm : 12.70

Rated speed rpm : 940  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1000

Rated speed rpm : 905  
rack travel mm : 12.70

Rated speed rpm : 941  
Tolerance 1/min : + 4  
rack travel mm : 4.00

rack travel mm : 0.50  
Tolerance mm : + 0.50  
Rated speed rpm : 1000

---

TORQUE CONTROL  
Rated speed rpm : 850

rack travel mm : 13.70  
Tolerance mm : + 0.05

---

ANEROID/ALTITUDE  
COMPENSATOR TEST

SETTING

Rated speed rpm : 500  
Pressure hPa : 1500  
rack travel mm : 13.75  
Tolerance mm : + 0.05

Rated speed rpm : 500  
Pressure hPa : -  
rack travel mm : 8.50  
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 320  
rack travel mm : 9.80  
Tolerance mm : + 0.25

Pressure hPa : 820  
rack travel mm : 12.40  
Tolerance mm : + 0.05

---

FUEL DELIVERY CHARACTERISTICS

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 218.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

---

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.  
See microcard(s) W400/...

Edition : 10.07.97  
Test oil : ISO 4113  
  
Combination No. : 0 402 946 026A  
  
Injection pump  
Pump designation : PES6P120A720RS8045  
EP type number : 0 412 926 028  
  
Governor  
Governor design. : RQV350...1100PA1305K  
Governor no. : 0 421 815 967

Cust. part No. : 1388631 - Version A

Customer-spec. information  
Customer : SCANIA  
Motor : DSI1174M

TEST BENCH REQUIREMENTS

Inlet line : EHAB  
  
Test oil inlet  
temp. °C : 40  
Tolerance °C : ± 2.0  
  
Overflow valve : 2 417 413 082  
  
Inlet press. bar : 3.0  
Tolerance bar : ± 0.1  
  
Overflow quantity  
min. l/h : 80  
Tolerance l/h : ± 10.0  
  
Test nozzle holde  
assembly : 1 688 901 104  
  
Opening pressure  
bar : 251.5  
Tolerance bar : ± 1.5

Test lines : 1 680 750 008  
Outside diameter : 6.0  
x inside diameter : 2.0  
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES  
Set equal delivery quant.  
per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0  
Tolerance bar : ± 1.0  
  
Prestroke mm : 3.65  
Tolerance mm : ± 0.05  
Check  
tolerance mm : ± 0.10  
  
Rack travel in mm : 10.50  
Tolerance mm : ± 1.50  
  
Firing order : 1- 5- 3- 6- 2-  
: 4  
  
Phasing : 0-60-120-180-240  
: -300  
Tolerance : ± 0.30  
Check  
tolerance \*NW : ± 0.75  
  
Start of delivery blocking  
Tolerance : ± 0.10  
Check  
tolerance \*NW : ± 0.75  
  
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.75  
Tolerance mm : + 0.05

Del. quantity  
cm<sup>3</sup>/1000 strokes : 302.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 9.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0

Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 4.10  
Tolerance mm : + 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0

Tolerance  
cm<sup>3</sup>/1000 strokes : + 3.0

Check tolerance  
cm<sup>3</sup>/1000S. : + 6.0

Speed

Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0

Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

(B) SETTING OF INJECTION PUMP  
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1166  
guide sleeve  
travel mm : 10.16  
Tolerance mm : + 0.15

Rated speed rpm : 350  
guide sleeve  
travel mm : 2.00  
Tolerance mm : + 0.20

Rated speed rpm : 755  
guide sleeve  
travel mm : 6.14  
Tolerance mm : + 0.25

Rated speed rpm : 460  
guide sleeve  
travel mm : 4.07  
Tolerance mm : + 0.25

Rated speed rpm : 1400  
guide sleeve  
travel mm : 13.50  
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever  
position degree : - 1  
Rated speed rpm : 1237

Rack travel in mm : 12.75  
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100  
Aneroid pressure  
hPa : 1500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 302.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : + 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : + 9.0  
Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 8.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 12.0

CONTROL LEVER

control lever  
position degree : 65.0  
tolerance degree : + 4.0

control lever  
position degree : 119.0  
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.70  
Rated speed rpm : 1145  
Tolerance 1/min : + 5

Check  
speed 1/min : + 10

rack travel mm : 4.00

Rated speed rpm : 1247  
Tolerance 1/min : ± 15  
Check  
speed 1/min : ± 20

rack travel mm : 0.50  
Tolerance mm : ± 0.50  
Rated speed rpm : 1350

---

#### LOW IDLE

control lever  
position degree : 73.0  
tolerance degree : ± 4.0

control lever  
position degree : 20.0  
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : > 6.50

Testing:

Rated speed rpm : 350  
rack travel mm : 4.10  
Tolerance mm : ± 0.30

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#### TORQUE CONTROL

Rated speed rpm : 1100  
rack travel mm : 11.75  
Tolerance mm : ± 0.05

Rated speed rpm : 700  
rack travel mm : 10.90  
Tolerance mm : ± 0.10

---

#### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 1100  
Pressure hPa : 1500  
rack travel mm : 13.75  
Tolerance mm : ± 0.05

Rated speed rpm : 1100  
Pressure hPa : -  
rack travel mm : 7.10

N27

Tolerance mm : ± 0.20

#### MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 340  
rack travel mm : 8.35  
Tolerance mm : ± 0.25

Pressure hPa : 800  
rack travel mm : 10.65  
Tolerance mm : ± 0.05

---

#### FUEL DELIVERY CHARACTERISTICS

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Aneroid pressure  
hPa : 1500  
Rated speed rpm : 700  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

---

Aneroid pressure  
hPa : -  
Rated speed rpm : 500  
Del. quantity  
cm<sup>3</sup>/1000 strokes : 163.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 1.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 4.0

---

#### LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 4.10  
Tolerance mm : ± 0.30

Del. quantity  
cm<sup>3</sup>/1000 strokes : 30.0  
Tolerance  
cm<sup>3</sup>/1000 strokes : ± 3.0  
Check tolerance  
cm<sup>3</sup>/1000S. : ± 6.0

Speed  
Tolerance  
cm<sup>3</sup>/1000 strokes : 4.0  
Check tolerance  
cm<sup>3</sup>/1000S. : 8.0

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End of test specification sheet